UNPROTECTED

Backups may be made using standard copying procedures.

COMPATIBLE

Apple IIc, IIe or 64K II+ ProDOS™
(Some programs require Apple IIc or 80-column IIe.)

BEAGLE BROS
EST. 1980
MICRO SOFTWARE, INC.

BIG U

ProDOS™ UTILITY
by RANDY BRANDT

Compatibility Note: The programs listed in this column require an Apple IIc or 80-column Apple IIe:

FILE.MOVER: Replaces Apple's *filer* programs for transferring ProDOS files from disk-to-disk (or directory-to-directory). Fast and super-friendly, with menu-selectable options.

CRT.WRITER: Create fancy 80-column title screens for your programs. Or write and print short notes without having to boot your word processor. Includes advanced features like block-move and instant "undo" to repair mistakes. Save your screens on disk for later use.

KEYCAT.80: Press Control-Reset to *instantly* see a disk's catalog in 80-column menu format. One keystroke Loads or Runs programs.

RAM.LOAD: Automatically transfers files to and from the RAM disk. Loads files fast—10 blocks per second! Make a custom floppy with your most-often used programs, and load them all into memory at once.

Compatibility Note: The programs listed in this column require 64K minimum and no special hardware:

18 NEW ProDOS COMMANDS: *COPY* copies files from disk to disk, *ANYCAT* catalogs 3.3 *and* ProDOS disks, *XLIST* lists files in improved format (each statement on a new line), *MON* monitors ProDOS operations, *SHOW* loads *and* shows hi-res pix, *SEE* lists disk files without loading.

ProDOS ERROR EDITOR: Re-word error messages to anything you want. Change "Path Not Found", etc.

SMARTER INPUT! Accepts commas & colons and rejects control-characters. Press Esc to abort or Return anytime. Lets you pre-determine the input string's maximum string length.

REM ZAPPER: Work with two versions of the same Applesoft program—one with Rem's and one without. You can restore Rem's anytime for editing. *Much Much More* including updated ProDOS versions of many of Beagle Bros' 3.3 UTILITY CITY programs.

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Beagle Bros
MICRO SOFTWARE

BIG U

ProDOS™ UTILITY
by Randy Brandt

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TTH

THE BIG INTRO

Big U is a disk packed with U-tilities that increase ProDOS's performance. You Applesoft programmers, beginner and experts, will love using Big U's powerful machine language routines and commands in your programs. And every Appler can have fun customizing ProDOS and using Big U's utility programs.

HAVE FUN WHILE YOU LEARN

This manual assumes that you have a basic understanding of loading and saving files, cataloging a disk, and so on. We have done our best to keep things simple, so even if you're a raw beginner, be patient with your Apple and have fun! If you don't have Apple's "Basic Programming With ProDOS" and "Basic Tutorial" manuals, run out and buy them.

If you're an old DOS 3.3 veteran starting to explore ProDOS, you'll be surprised by some things, but you shouldn't have any real trouble. See page 72 for a summary of ProDOS commands. If you're interested in the advanced technical aspects of ProDOS, get the book, "Beneath Apple ProDOS" from Quality Software.

EXECUTING BIG U PROGRAMS

All BIG U programs are run by typing "-filename" (that's a hyphen followed by the program's name).

BACK IT UP!

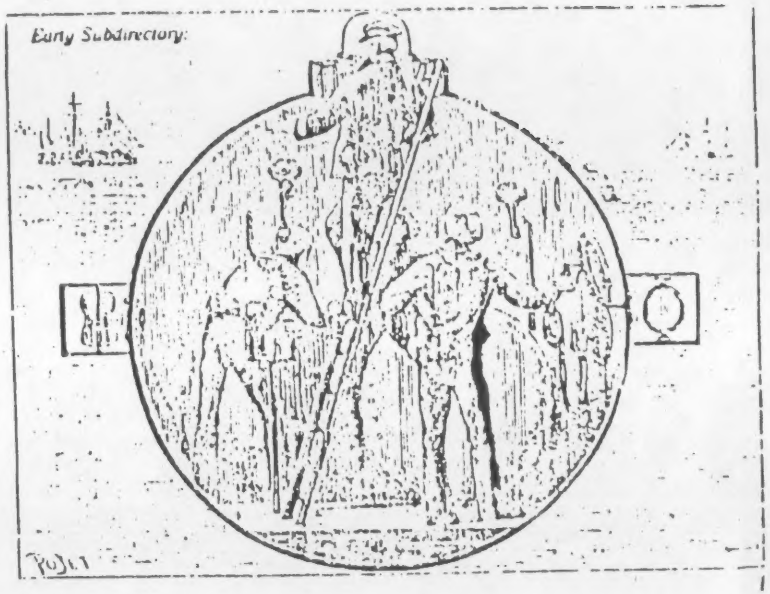
Big U comes from the factory unlocked and unprotected, giving you the freedom to inspect its programs and to copy them from disk to disk. Make a duplicate of your original so that any exotic experimenting or accidents won't ruin the original. Big U's FILE.MOVER program (page 19) can make copies file-by-file, or any disk copy program will copy the entire disk. (Our favorite is DISK.COPY from Beagle's "Extra K" disk.)

Please don't get carried away by giving copies of our disks to your friends. Every illegal copy is a vote for copy protection and against friendly software. You support us and we'll support you.

PATH NOT FOUND?

If ProDOS is giving you "Path Not Found" errors every time you try to load a file, you are probably having prefix problems. See your "BASIC Programming With ProDOS" manual to learn more. The best suggestion we have is to type "PREFIX/" to cancel the prefix before loading files.

Since the Big U disk doesn't have any subdirectories, you shouldn't have many Path Not Found problems with it, unless you spell a file name wroag.



THE BIG U DISK CATALOG

To see Big U's catalog, type "CAT". In 80-columns, you can type "CATALOG".

ANYCAT (page 46): A new ProDOS command that catalogs DOS 3.3 (and ProDOS) disks

APPENDER: (page 38) A program that joins two or more Applesoft programs

BASIC.SYSTEM: The ProDOS/Applesoft "mediator" that works with PRODOS 1.1.1

BEEPERWORKS (page 58): A program that lets you change AppleWorks' error beep

BIGLINER (page 59): A program that creates illegal line numbers in your programs

BIG.U (80-columns): The title screen used by Big U's STARTUP program

CAT.DATER (page 60): A program that makes CAT and CATALOG display the current date

CAT.FIXER (page 61): A program that makes CAT display in multiple columns, and CATALOG auto-switch to 80 columns

CAT.STEPPER (page 60): A program that makes CAT and CATALOG step through catalogs one file or one screen-full at a time

COPY (page 47): A new ProDOS command that copies ProDOS files from one disk to another (requires two drives or 128K)

COPY.1 (page 47): A version of COPY that works with single drives

COPYRIGHT.1985: A program that demonstrates what you can do with SUPER.POKE

CRT.WRITER (page 9): A screen editor that lets you create fancy title screens and write quick notes (requires 80-column IIe or IIc) (CRT.CODE is an accompanying file)

DATE.SET (page 63): A program that sets the time and date in Apples without a built-in clock

DISK.COPY.MORE (page 64): A program that updates Extra K's Disk Copy program so it copies 38-track disks in about a minute (requires Extra K disk)

DUMP (page 48): A new ProDOS command that prints 40 or 80 column screens (requires 80-column Apple IIe or IIc)

DUMP.40 (page 39): A program that lets you dump the 40-column screen on your printer

DUMP.80 (page 39): Like DUMP.40, but for 80-column screens

ERROR.EDITOR.(page 65): A program that lets you change ProDOS error messages (ERROR.CODE is an accompanying file)

EST (page 48): Three new ProDOS commands that Erase memory, show Space left on a disk, and see what the Time is

FILE.MOVER (page 19): A ProDOS file copier, deleter, renamer and disk formatter (requires 80 columns; Apple IIe or IIc)

FILEMOVER.SETUP (page 31): A program that changes FILE.MOVER to work with 36-40 tracks

HEX (page 49): New ProDOS memory-display commands and number converters

HEX.H (page 49): A hidden version of the HEX commands

INPUT.40 (page 40): A program that gives you a smarter &INPUT command for the 40 columns

INPUT.80 (page 40): Same as INPUT.40, but for 80 columns

INPUT.SETUP (page 41): A program that changes the maximum &INPUT string length

KEYCAT.80 (page 32): A program that lets you see an instant list of disk files, selectable with one or two keystrokes (requires 80 column Apple IIc or IIe)

KEYCAT.SETUP (page 36): A program that reconfigures KEYCAT.80

MON (page 52): A new ProDOS command that monitors ProDOS disk operations

NOTES: A program that shows you the latest changes to this manual

ONLINE (page 53): A new ProDOS command that identifies every disk in every drive

PRODOS: Version 1.1.1 of Apple's newest Disk Operating System

RAM.LOAD (page 68): A program that loads files from floppy into /RAM at 5K per second (requires 128K)

RAM.SAVE (page 67): A program that saves all /RAM files to floppy disk (requires 128K)

RAM.SETUP (page 69): A program that configures RAM.LOAD and RAM.SAVE

RANDY.BRANDT: A strange name for a program that demonstrates Big U's new SHOW command

REM.OVE (page 42): A program that eliminates Rem's from Applesoft programs

REM.OVE.128 (page 42): A program that saves your program on RAM disk, then eliminates Rem statements (requires 128K)

RENEW (page 70): A new ProDOS command that recovers Applesoft programs killed by NEW

RUN.COUNTER (page 70): An program that keeps track of the number of times your program is run, and/or the last date it was used

SAVE.40 (page 71): A program that gives you a new &SAVE command for saving 40 column text screens

SAVE.80 (page 71): Same as SAVE.40, but for 80 columns (requires 80 columns)

SEE (page 53): A new ProDOS command that lists Applesoft disk files without loading them

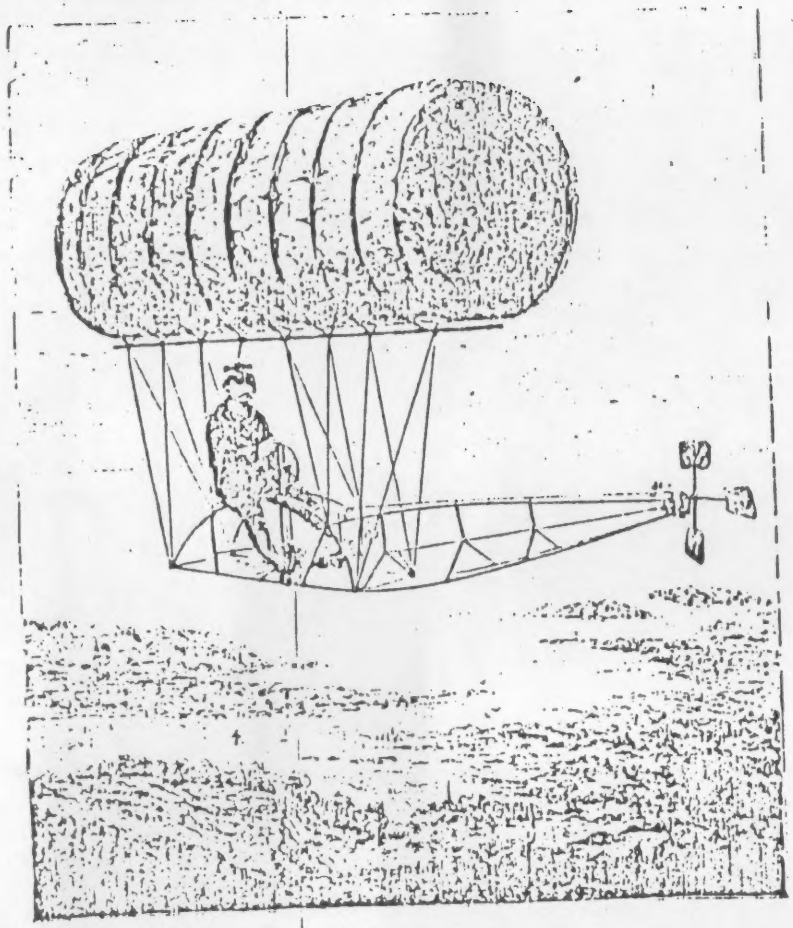
SHOW (page 54): A new ProDOS command that loads and displays pictures from disk

SHOW.WIPE (page 55): A version of SHOW for double hi-res, and a new ProDOS WIPE command that erases all RAM disk files (requires 128K)

STARTUP: The main menu program that runs when you boot the Big U disk

SUPER.POKE (page 44): A program that gives you a new &POKE command that Pokes numbers fast

XLISTER (page 56): A new ProDOS command that lists programs in improved format



BEAGLE BROS RECOMMENDS

If you are new to ProDOS, we highly recommend Apple's book, BASIC PROGRAMMING WITH ProDOS.

If you are an advanced programmer (or would like to become one), we highly recommend Quality Software's book, BENEATH APPLE ProDOS.

CRT.WRITER

Apple IIc or 80-column Apple IIe required

CRT.WRITER is a combination Applesoft/machine language program that allows you to write and print short letters or memos and do quick jobs like address envelopes (if your printer can handle them). It also allows you to easily create elaborate title screens which can be saved on disk and used by your programs.

This "screen processor" is so committed to the What-You-See-Is-What-You-Get philosophy that each document can be viewed in its entirety without any scrolling, page-flipping or disk access. Of course, each document is only one screen long, but what did you expect?

ONE PROGRAM, TWO FILES

Make sure you copy both of the files, "CRT.WRITER" and "CRT.CODE" if you want to move the program onto another disk.

GETTING STARTED

Type "-CRT.WRITER". The copyright message will soon be displayed in the middle of the screen. Press any key to get started.

To create a screen, you can just start typing. The Return key and arrow keys do about what you'd expect them to do. Don't forget though, that you're limited by the space on the screen.

APPLE-KEY COMMANDS

To issue a command, you must hold down the left (or "open") Apple key while pressing another key. To simplify things, we'll just call open-Apple the "Apple key" from now on.

CRT.WRITER COMMAND SUMMARY

OA = Open (left) Apple key
BA = Both (left and right) Apple keys

MOVING THE CURSOR:
OA-0 (zero): To top left of screen
OA-1...OA-9: Reposition in current column
Arrow keys: Move one character or one line
OA-left arrow: To left-most character in line
OA-right arrow: To right-most character in line
Tab: To next tab position
OA-Tab: To previous tab position

SCROLLING THE SCREEN:
BA-up arrow: Screen up (rulers must be off)
BA-down arrow: Screen down (rulers must be off)

MOVING TEXT:
OA-L: Left justify current line
OA-C: Center current line
OA-R: Right justify current line
OA-D: Duplicate a block (leaves original)
OA-M: Move a block (erases original block)

DELETING TEXT:
(Press Apple-Delete the indicated number of times.)
1: Clears from cursor to end of line
2: Clears remainder of line
3: Clears all lines below the current line
4: Clears the entire screen

DISK COMMANDS:
OA-K: Catalog drive 1
BA-K: Catalog drive 2
OA-G: Get screen from disk (load)
OA-S: Save screen to disk

OTHER COMMANDS:
OA-A: MouseText on/off (if available)
OA-I: Inverse text on/off
OA-P: Print the screen
OA-Q: Quit and exit to Applesoft
OA-T: Toggle tab rulers on/off
OA-U: Undo changes (if still possible)
OA-V: Toggle vertical typing on/off
OA-X: Credits

Apple-0: CURSOR HOME
Pressing Apple-0 (zero) puts the cursor in the upper left corner or "home" position of the screen.

Apple-1...Apple-9: RELOCATE THE CURSOR
Pressing Apple-1 through Apple-9 proportionally positions the cursor vertically on the screen without changing its horizontal position.

Arrow Keys: MOVE THE CURSOR
The Arrow keys move the cursor about like you'd expect. Try all four of them.

Apple-Left/Right Arrows: JUMP LEFT & RIGHT
Apple-Left Arrow jumps the cursor to the left-most character on a line, while Apple-Right Arrow, logically enough, moves you to the right. Spaces do not count as characters.

Both Apples-Up/Down Arrows: SCROLL THE SCREEN
To scroll the screen up or down, hold down both Apple keys and press the Up or Down Arrow key. Scrolling is not available with the tab rulers visible. (Press Apple-T to turn the rulers on and off.)

Return: CARRIAGE RETURN
Just like on a typewriter.

Apple-C: CENTER A LINE
Pressing Apple-C will center the line of text that the cursor is on.

The left and right-most characters on the line determine how it will be positioned. If you are creating a screen that will have borders, center the text first. If you make your borders first, no positioning commands will have any effect.

Apple-L & R: LEFT & RIGHT JUSTIFY
Pressing Apple-L or Apple-R will position the line of text at the cursor to the far left or far right of the screen. The border note under "Apple-C" (above) applies here too.

Apple-V: VERTICAL TYPING
This command is especially useful for title screen creation, but it is also suitable for creating acrostics and acronyms. Press Apple-V and the cursor will change to a "^". All text will now be typed vertically. Press Apple-V again to get back on the level.

To make a simple border, use inverse spaces (press Apple-I first) and use vertical typing to enter the sides. You might want to make the sides two characters wide so the thickness is comparable to the top and bottom rows.

Apple-Delete: DELETE TEXT
Pressing the Delete key alone simply prints a block character on the screen. Apple-Delete, however, clears varying portions of the screen, depending on how often it is pressed.

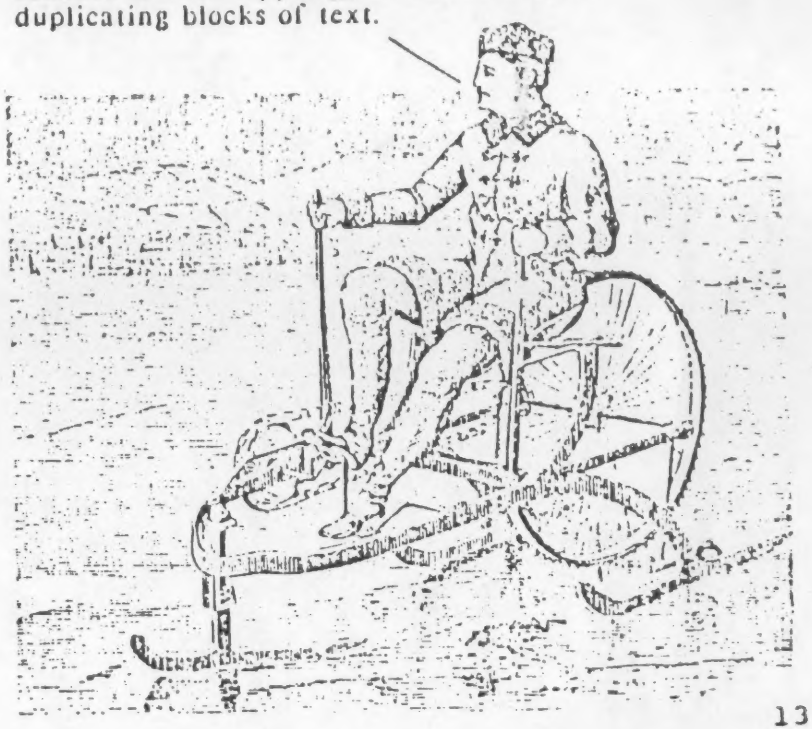
Press Apple-Delete once to clear text from the cursor to the end of the line.

Press it a 2nd time to clear everything else on that same line.

Press it a 3rd time to clear everything to the bottom of the screen.

Press it a 4th time to erase the entire screen. In other words, to erase the entire screen, hold down the Apple key, and press the Delete key four times. Accidental deletions may be undone (see "Apple-U: UNDO").

Note: This command uses the "Delete" key. Don't confuse it with Apple-D, which is used in duplicating blocks of text.



Tab & Apple-Tab: TABBING
Press the Tab key to move the cursor to the next tab setting (indicated on the tab rulers at the top and bottom of the screen). Existing text will not be affected.

Pressing Apple-Tab moves the cursor back to the previous tab stop.

Note: The tab settings cannot be adjusted.

Another Note: Tab is the same as Control-I.

Apple-T: TAB RULERS OFF/ON
Pressing Apple-T turns the tab rulers at the top and bottom of the screen on and off. These rulers are primarily useful for helping you "eyeball" the position of the cursor.

Note: You can't type over the tab rulers.
To use the top and bottom screen lines, turn off the rulers first. Restoring the rulers will temporarily hide your text, but won't erase it.

Note: The screen scrolling commands (page 11) will not work with the tab rulers on. Several other commands automatically turn the rulers off.

Apple-I: INVERSE TEXT
Note: Inverse text will be sent to your printer as normal-looking characters. (Don't blame us; blame your printer.)

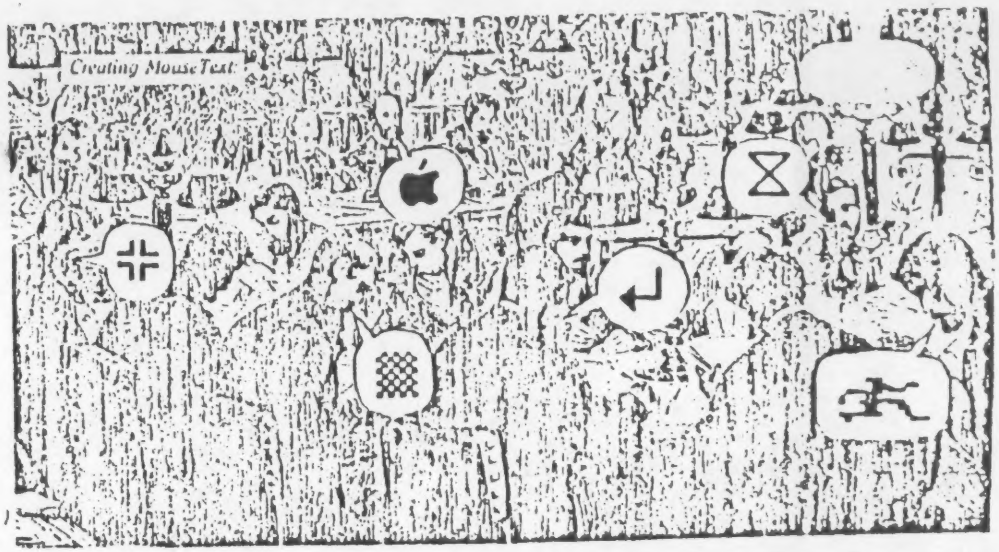
Pressing Apple-I toggles inverse text mode (black on white) on and back off again. Try it and see.

Depending on your Apple, you may not be able to display inverse lower case. Turn on MouseText (if your Apple has it; see below) to get inverse lower case.

Apple-A: APPLE MOUSETEXT
Note: MouseText text will be sent to your printer as normal-looking characters. (Don't blame us; blame your printer.)

Pressing Apple-A toggles MouseText off and on if you have an Apple IIc or an enhanced (newer-model) IIe. MouseText upper-case characters are graphic symbols (see the back of your Peeks & Pokes chart). Lower-case characters will appear as inverse lower-case.

To type a bunch of MouseText running men, type "FGFGFG...". (But wait: Apple has announced that they will be eliminating this little feller from future Apples. If you don't see him on your screen, that's why.)



Apple-D: DUPLICATE A BLOCK
To duplicate a block of text on the screen:

1. Put the cursor on a corner of the block you want to duplicate.

2. Press Apple-D. A number "1" will mark the spot. (You may press Esc at any time to leave the duplication mode.)

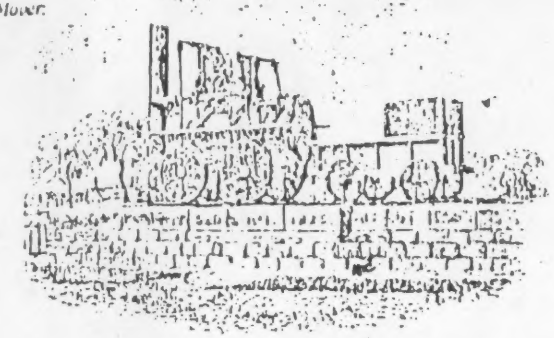
3. Move the cursor (now a "2") to the diagonally opposite corner of the block to be duplicated, and press Return.

4. Move the cursor (now a "D") to the upper-left corner of the block's future location and press Return.

The entire block must fit at the new location. A beep means that the limit has been reached. For example, if you're duplicating a block 80 characters wide, you'll only be able to move the "D" cursor vertically.

Apple-M: MOVE A BLOCK
The procedure for moving a block of text is virtually identical to that for duplicating, except that the original block of text is erased. Substitute Apple-M for Apple-D in step 2 above. The cursor in step 4 will be an "M" instead of a "D".

Early Block Mover.



Apple-U: UNDO A MISTAKE
You may press Apple-U to undo screen changes after certain operations. Apple-U must be pressed immediately after the change has been made (that is, before doing anything else). It works after the delete, move and copy commands, and after screen scrolling and line positioning.

Although it's great for undoing mistakes, Apple-U also comes in handy when you want to see how moving or copying a block affects the screen, without committing yourself to the new layout.

Apple-P: PRINT THE SCREEN
When you want a "hard copy" of the current screen display, just press Apple-P. CRT.WRITER assumes that your printer is in slot 1. You may press Esc at any time to stop printing.

MouseText and Inverse characters will be printed as normal characters.

Apple-K: CATALOG THE DISK
Press Apple-K to catalog (katalog?) drive 1. Hold down the right-Apple key too if you want to catalog the disk in drive 2.

Technical note: If you want to let CRT.WRITER catalog a subdirectory or the RAM disk, change variables K1$ and K2$ in line 5 of the program. K1$="" would catalog the current directory, K1$="/TEST/SUB" will always catalog the SUB subdirectory of disk "/TEST" and so on.

Apple-S: SAVE THE SCREEN
When your masterpiece is complete, press Apple-S and you will be asked for the screen name. Enter a legal ProDOS file name (or full pathname) like "TITLE". You may specify slot and drive values if you want (like "TITLE,D2). Be sure to use a unique name so you don't overwrite screens that are already on the disk.

Saved screens are identical in format to those created with the SAVE.80 program (page 71). To load a screen called "ABC", simply type "-ABC" from Applesoft, or use this command in a program:

```
10 PRINT CHR$(4)"-ABC"
```

Apple-G: GET (LOAD) A SCREEN
Press Apple-G to show everyone why you worked on your computer all weekend. When you're asked for the screen name, type in the name you used to save it. After the screen is loaded, it can be modified and resaved under another name (or the same name if you want to erase the old version).

Screens created with the SAVE.80 program (page 71) may also be read by CRT.WRITER.

Apple-Q: QUIT
Although you'll probably never want to use this option, it may be necessary from time to time. Press Apple-Q, and you will be asked if you want to quit. Type "Y" followed by Return to exit to Applesoft. Any key but "Y" will let you stay in CRT.WRITER.

ONE MORE THING...
Feel free to use CRT.WRITER to create screens for any programs that you write. We simply ask for a little credit. Just acknowledge your use of CRT.WRITER in the documentation and send Randy Brandt and Bert Kersey 75% of your gross sales. 25%? 10%? Oh, never mind...

FILE.MOVER

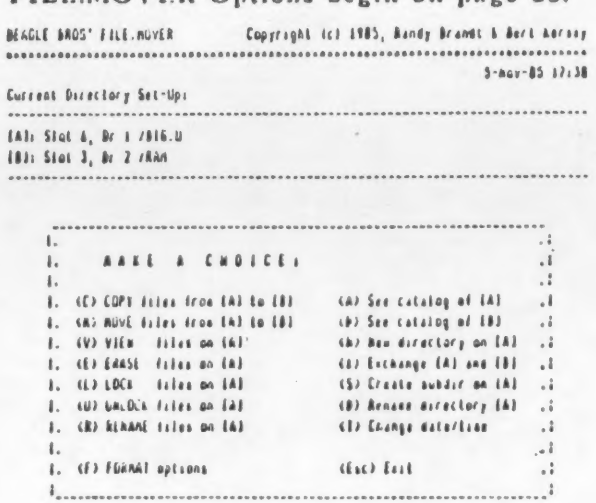
Apple IIc or Apple IIc+
Apple IIe required

FILE.MOVER is a fast, user-friendly program for copying files, formatting disks, and handling other file operations such as deleting, renaming, locking and unlocking files.

Unlike Apple's FILER, this program does not require BASIC.SYSTEM to be reloaded, or lengthy pathnames to be entered. It has the edge on the IIc System Utilities disk because it is faster, takes up much less disk space (under 30 blocks compared to 151 blocks!), and is compatible with the RAM disk. Only FILE.MOVER has options to view files, move files, and to format disks with more than 35 tracks.

GETTING STARTED
Type "-FILE.MOVER" or select it from Big U's main menu. The current date and time (if available) will be shown near the top right of the screen. Below that, disk directories [A] and [B] are identified with their slot and drive values. All file handling is based on these two "working" directories. They may be different disks, or subdirectories of the same disk. Use option N to change them.

FILE.MOVER Options begin on page 23.



ENTERING NAMES WITH FILE.MOVER

You will only have to type a name if you are creating a subdirectory or renaming a file or directory. On these occassions, the following rules and features will apply:

- You are forced to start with a letter A-Z.
- You are limited to 15 characters.
- Spaces are automatically converted to periods.
- The Delete key erases the character to the left of the cursor and "pulls back" characters to the right.
- Control-Y erases all characters to the right of the cursor, including the cursor position.
- Regardless of the cursor position, you may press Return to accept the name shown.
- Esc cancels the entry. (Pressing Esc nearly always gets you out of unwanted situations.)

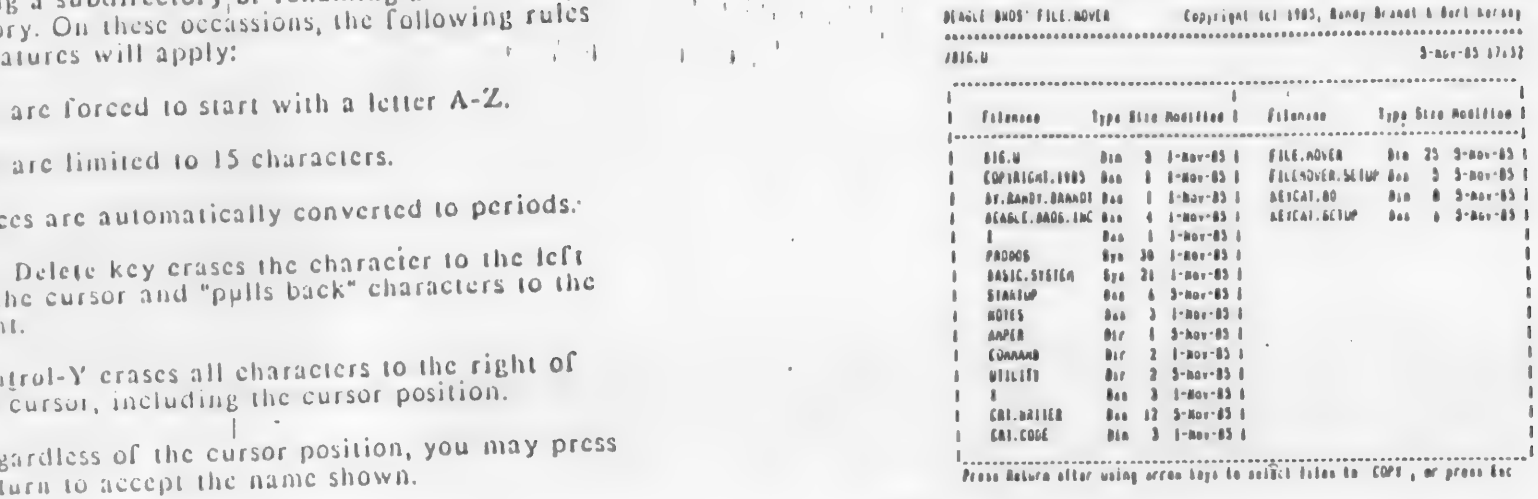
PRINTING THE FILE.MOVER SCREEN

Press Control-P at almost any time to dump the text screen to a printer in slot 1. If the print-out has some blank lines caused by extra carriage returns, run FILEMOVER.SETUP (page 31).

You cannot dump the hi-res screen in the VIEW option (page 24), and Control-P is ignored when FILE.MOVER expects you to type a file name. If your printer is in slot 2, type "PR#1,A$C200" before running FILE.MOVER.

SELECTING FILES WITH FILE.MOVER

When you select certain file operations from the main menu, directory [A] will be read and its files will be displayed on the screen. For example:



Moving the Cursor:

The first file name will be highlighted in inverse (black letters on a white bar). Let's call that bar the "cursor". To move the cursor to other files, move up or down with the vertical arrow keys ("A" or "Z" for II+ users), or move from column to column by pressing Tab (or Control-I).

Selecting Files:

Press the right arrow key to select the file name at the cursor. De-select files by pressing the left arrow key.

Press Control-A to select all files, ignoring previous selections.

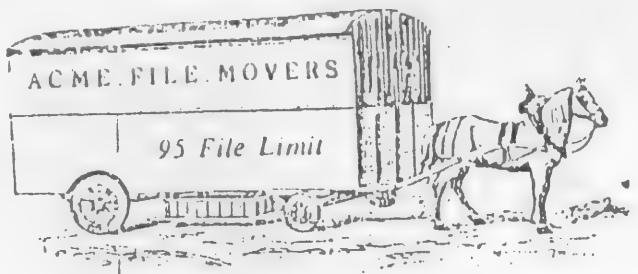
When all desired files have been selected in the proper order, press Return to let FILE.MOVER go to work. While the chosen file operations are going on, you may press Esc to quit.

Changing the Order of Files:
A number will appear to the left of each selected file name. This determines the order in which file operations will occur, allowing you to organize disks by copying files in any order.

To change a file's number, move the cursor to the file name. Deselect the file if necessary with the left arrow, and then type the first digit (1-9) of the new number that you want. A question mark will appear. Press the space bar for a single digit number, or enter the second digit. This option is designed for inserting a file into a sequence already selected. Previously selected files will be renumbered as necessary.

If only a few files are out of order on a disk, select all files (see Control-A, previous page), then de-select the misplaced ones so that you can enter the correct numbers directly.

Viewing Large Directories
FILE.MOVER displays a maximum of 29 files at a time; if a directory has more, "view next page" will appear in place of file 30. Move the cursor there and press Return to see more files. Another page will be shown with a "view previous page" option and (possibly) another "view next page" option. The limit is 95 files per directory. Files from 96 on will be ignored by FILE.MOVER.

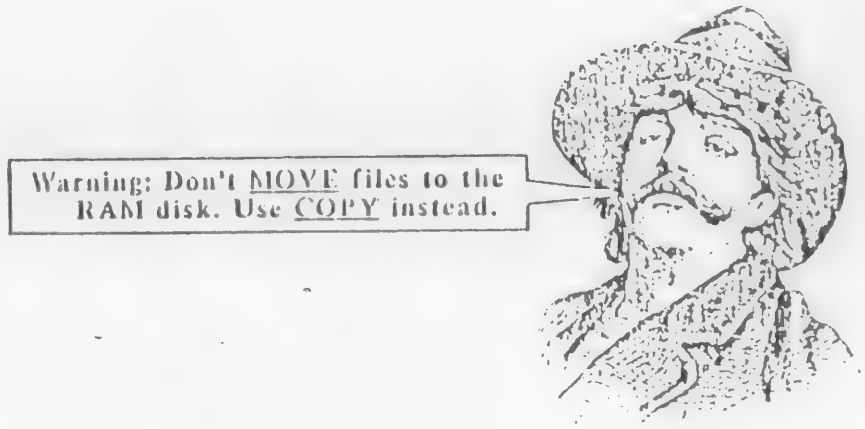


FILE.MOVER OPTIONS

C: COPY FILES FROM [A] TO [B]
Press "C" to copy files from directory [A] to [B]. Select the desired [A] files from the menu on the screen. See "Selecting Files" (page 21).

If you copy a locked file, both the original and copy will be left unlocked. Single drive users will be prompted as to which disk volume to insert as the copying occurs.

M: MOVE FILES FROM [A] TO [B]
Press "M" to move files from directory [A] to directory [B]. This option is identical to the Copy option (above), except that the original file will be deleted. It is especially handy for grouping files in a subdirectory on a disk. Just move the files from the disk's main directory into the subdirectory on the same disk. The disk must have at least as many free blocks available as the size of the largest file being moved.



V: VIEW FILES ON [A]

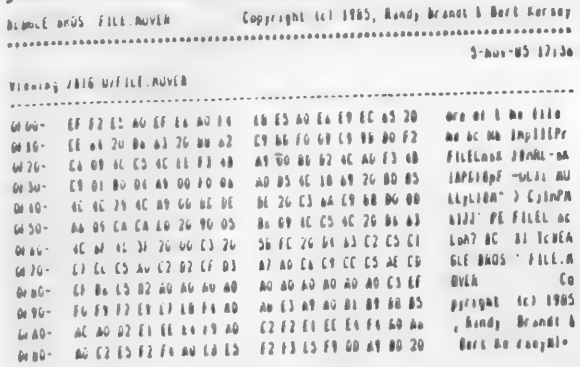
Press "V" to view a file on directory [A] in hex/ASCII format. When the file menu appears, highlight the desired file name and press Return to load it for viewing.

Use the left and right arrow keys to page back and forth through a file. Press Control-P to print the screen at any time.

The hex number to the left of each line is the offset of that line within the file. For example, the first byte on line 1 is at 0, because it is 0 bytes from the beginning of the file. The first byte on line 2 is $10 (16 decimal) bytes from the beginning, the last byte on line 2 is $1F (31 decimal) bytes away, and so on.

Press Return to see how the file looks as a hires picture. It'll probably look like garbage unless you loaded an actual picture file. Press any key to get back to the text display.

Press Esc to return to the main menu when you're finished viewing.



FILE.MOVER can load a maximum of 16 blocks (8K) at a time, so larger files must be viewed in several sections. When the end of a section is reached (every $2000 bytes), you are prompted to press Return to read the next section, or Esc to continue viewing the current section. Once you read a new section, you cannot return to the previous one unless you go back to the menu and restart with the view option. This "chunk-by-chunk" method lets you view massive 100K files like the main AppleWorks segment.

E: ERASE FILES ON [A]

Press "E" to erase (delete) files from directory [A]. Select the doomed files from the menu (see page 21) and they will be ruthlessly destroyed. If files are locked, you will be asked for permission. Press "Y" to erase it, or "N" to grant a stay of execution.

Note: A subdirectory cannot be erased unless it does not contain any files.

L: LOCK FILES ON [A]

Press "L" to lock files on directory [A]. Select the files to be locked from the menu (see page 21) and FILE.MOVER does the rest.

Note: You will not get an error if you lock a locked file or unlock an unlocked one.

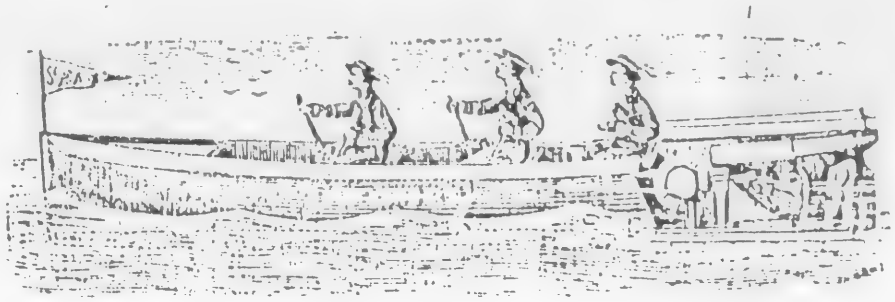
U: UNLOCK FILES ON [A]

Press "U" to unlock files on directory [A]. This option works similarly to option "L", above.

R: RENAME FILES ON [A]

Press "R" to rename files in [A]. Select the files to be renamed from the menu (see page 21). Type the new name, or just press Return (or Esc) to skip the current file.

If a file is locked, it will be unlocked anyway and you will be allowed to rename it. The file will remain unlocked under its new name.



A or B: SEE CATALOG OF [A] OR [B]
Press "A" or "B" to directory [A] or [B]. As with normal ProDOS catalogs, you may press Control-C to exit early. Unlike normal, you may press the space bar to "single-step" through the file names.

N: NEW DIRECTORY ON [A]
Press "N" to change the directory represented by [A] near the top of the screen. You will then have three options: A, D and N (or Esc to exit):

A: Add a Subdirectory
Press "A" to read a subdirectory on directory [A]. A menu of disk [A] files will be shown. Use the arrow keys to select the subdirectory you want. Press Return to select the subdirectory, or Esc to exit.

For example, if you select the SUBFILES subdirectory after reading the /DISK main directory, [A] will become "/DISK/SUBFILES".

D: Drop a Subdirectory
Press "D" to drop the last subdirectory from directory [A]. For example, if [A] was set to "/DISK/SUBFILES", pressing "D" would change it to "/DISK".

N: New Disk
Press "N" to read a new disk. Then specify the slot and drive you want. Enter the desired slot (1-6) and drive (1-2), insert the new disk, and press Return to read it. You will be returned to the main menu, with the new disk's volume name listed as directory [A].

Most Apples use slot 6 for disk drives 1 and/or 2. Hard disks are often in slot 7 or 5. The RAM disk is always slot 3, drive 2.

Apple IIc Note: The "internal drive" is slot 6, drive 1, the "external drive" is slot 6, drive 2.

X: EXCHANGE [A] AND [B]
Most options apply only to [A], so this option lets you move [B] to [A] with an "X" keypress.

S: CREATE SUBDIRECTORY ON [A]
Press "S" to create a subdirectory in directory [A]. Then type a name for the new subdirectory (page 20). Use the "Add subdirectory" option if you want to use the newly created subdirectory on [A].

This option is useful for grouping files on a disk. Create a new subdirectory, choose it as directory [B], and then move files into it from the main directory on [A].

D: RENAME DIRECTORY [A]
Press "D" to rename directory [A]. This option will actually rewrite the name on the disk. For example, you could rename /BIG.U, /LITTLE.U.

Type in a new directory name (see page 20). If subdirectories have been added to [A], you may only rename the most recent subdirectory.

T: CHANGE DATE/TIME
Press "T" to set the date and time. If your Apple has a clock, this option is unavailable. Use the left and right arrows to highlight the segment you wish to change. The day is always highlighted first, so pressing the left arrow would move you to the minutes, while pressing the right arrow first would highlight the month.

Use the up arrow or "A" to increase the highlighted value, and the down arrow or "Z" to decrease it. All segments "wrap-around" when the end is reached. A "No Date" option appears between December and January.

Press Return when the date is correct, or press Esc to restore the date given when you selected this option. The date and time are not saved on disk by FILE.MOVER. Use the DATE.SET program (page 63) to do that.

F: FORMAT OPTIONS
("Format" means "erase", so be careful!)
Press "F" for the format menu, then choose a format option. Press Esc if you want to return to the main menu.

RAM Disk Options (128K Apples only)

I: Install /RAM
Press "I" to format the RAM disk (or reconnect it if it was disconnected).

D: Disconnect /RAM
Press "D" to disconnect the RAM disk so that auxiliary memory can be used for other purposes (like Beagle Bros' Extra K disk).

Floppy Disk Options
Formatting (or "initializing") a floppy disk allows ProDOS to use it for storing files. Remember, all existing information on the disk will be destroyed.

The newly formatted disk will be named "/BLANK." It may be renamed to any legal name with the "Rename Directory" option on the main menu.

N: New Format Slot/Drive Values
Press "N" to enter new slot and drive values. (Unlike other FILE.MOVER operations, diskette formatting has nothing to do with [A] and [B].) Enter the new values and press Return.

F: Normal Format (35 tracks)
Press "F" for a normal ProDOS format. This option works with all 5-1/4" Apple drives. They have 35 tracks which store 4K each, giving a total capacity of 140K, or 280 blocks. Directory information takes up 7 blocks, leaving 273 free for files.

Press Return to format the disk, or press Esc to return to the menu.

GOING BEYOND THE 35-TRACK LIMIT
Most Apple disk drives are capable of formatting 38 tracks, for a total disk capacity of 152K, or 304 blocks. All IIc drives, IIc DuoDisk and IIc UniDisk drives should work with 38 tracks. Many Disk II drives will work as well. Some non-Apple drives are even capable of formatting 40 tracks, giving you 160K of storage.

FILE.MOVER has a special format option to format disks for 38 tracks. If your drives can handle it, you can change this option to anything from 36-40 tracks (see FILEMOVER.SETUP, page 31). The instructions are the same for all formats.

S: Special Format (38 tracks)
Press "S" to format extra tracks. Press Return after the warning message. Esc returns you to the menu. The formatter cannot determine if a drive handles 35 tracks only, and will repeatedly try to "get at" the extra tracks. Open the drive door if you accidently try to format 38 or 40 tracks on a 35-track drive.

FORMAT ERROR MESSAGES
If a formatting problem arises, you will get one of the following messages:

Unable to format may be caused by a physically damaged disk or an incorrectly positioned disk in the drive. To avoid this, try slowly wiggling the drive door as you close it.

Unable to format write-protected disk occurs if the write-enable notch on the diskette is covered, or if you try formatting on a non-existent drive like slot 3, drive 1. Don't try formatting a printer slot; you'll have to press Control-Reset.

Unable to format due to bad drive speed means you might have to take your drive in to a dealer for professional service.

CREATING A BOOTABLE DISK

ProDOS-formatted disks contain only directory information, leaving the rest of the space for data. The PRODOS and BASIC.SYSTEM files necessary for booting are not automatically stored on the disk. Follow these steps to create a bootable disk:

1. Format a disk.
2. From the main menu, select "N" twice to change directory [A] to /BLANK (the new disk).
3. Press "X" to swap directories. Directory [B] is now /BLANK.
4. Press "N" twice and make /BIG.U directory [A].
5. Press "C" to copy files from /BIG.U to /BLANK.
6. Copy PRODOS and BASIC.SYSTEM.
7. Insert /BLANK in drive 1 and reboot. It should boot and exit to BASIC.SYSTEM.

   ProDOS automatically runs any program named STARTUP after BASIC.SYSTEM is loaded. To make a simple STARTUP program, type "NEW" and enter this program:

```
10 HOME
20 PRINT CHR$(4);"CAT"
```

   Now type "SAVE STARTUP" and reboot; this time your new disk will clear the screen and then catalog itself.

QUITTING FILE.MOVER

Press Esc from the main menu. Verify your choice by pressing "Q" and you will be returned to Applesoft. Any previously existing program will have vanished, but utilities such as GPLE and ProDOS external commands above Himem should have survived.

CUSTOMIZING PRODOS 1.1.1 FOR EXTRA TRACKS

ProDOS 1.1.1 is normally limited to 280 disk blocks (35 tracks), so it will ignore the extra 24 blocks on a 38-track disk. Here's how to increase its capacity for up to 40 tracks:

1. From Applesoft, type "BLOAD PRODOS,TSYS,A$2000".
2. Type "CALL -151".
3. Type "56E3:*number*"
   Replace *number* with 20 for a 36-track drive, with 28 for a 37-track drive, with 30 for a 38-track drive, with 38 for a 39-track drive, or with 40 for a 40-track drive.
4. Type "BSAVE PRODOS,TSYS,A$2000".
5. Type "3D0G" or press Control-Reset to get back to Applesoft.
6. Reboot to install the new extra-track version. It will still work properly with 35-track disks.

FILEMOVER.SETUP

Use this program to change FILE.MOVER's special format option to anything from 36-track to 40-track formatting. Type "-FILEMOVER.SETUP,D1" to get started. After FILE.MOVER is loaded, you may select the desired number of tracks.

Some printers automatically do a carriage return after 80 characters are printed. FILE.MOVER normally does too, so you may get double-spacing in part of your printouts. To cancel FILE.MOVER's carriage returns, select option "P". Press "S" to save FILE.MOVER with the new values.

KEYCAT.80

KEYCAT.80 is a "file menu" program that lets you select programs from disk with only a couple of keystrokes. After typing "-KEYCAT.80" only once, you can access the file menu any time you want by pressing Control-Reset or by typing "-/RAM/MENU".

KEYCAT.80 CREATES MENU

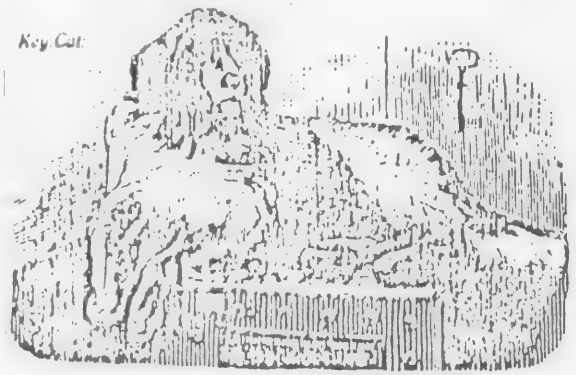
When you type "-KEYCAT.80" (see next page), you are actually creating a new file called "MENU" on the RAM disk (if you have 128K) or on a floppy disk (if you have only 64K).

IF YOU DON'T HAVE 128K

KEYCAT.80 comes set up so that MENU will be stored in the RAM disk (slot 3, drive 2--128K required). If you have only 64K, stop now and Run the KEYCAT.SETUP program (see page 36). It will let you specify a new slot and drive for the disk that will contain the MENU program.

TO CANCEL CONTROL-RESET

MENU is normally activated by pressing Control-Reset. If, however, you don't want our program messing with Control-Reset's normal functioning, stop now and Run KEYCAT.SETUP (page 36). It will let you prevent Control-Reset from activating MENU. Typing "-/RAM/MENU" will still do the job.



GETTING STARTED

KEYCAT.80 is harder to explain than it is to use, so go ahead and use it and see what happens. Here's what you do:

1. Remember, if you don't have 128K, or if you don't want to use Control-Reset, use the KEYCAT.SETUP program first (see page 36).

2. Type "-KEYCAT.80" to create and install the MENU program (do this only once).

3. Bring MENU to the screen by pressing Control-Reset, or by typing "-/RAM/MENU" (do this anytime you want to select a file).
   ☞ Note: Depending on your system and MENU's slot and drive location, you may have to type a command like "-MENU,S6,D1" or "-/RAM/MENU".

4. With the file menu on the screen, press Return to read a directory (see page 34) or select a file by pressing the key corresponding to the letter or number next to its name (below).

SELECTING FILES

Once the files you want are on the screen, select one of them by pressing the key corresponding to the letter or number next to its name. Then you have three choices:

1. Press "R" to Run the file.
   ("Dir" files cannot be Loaded or Run.)
2. Press "L" to Load the file.
   ("Bin" and "Bas" files only).
3. Press Esc to skip selecting this file.

If the directory has 36 or more files, press "Z" to view more files. Press "0" to get back to the first group of files.

READING A NEW DIRECTORY
If there are no file names visible in the menu, or if you want to see files from another disk, press Return and select one of the options that appear at the bottom of the screen:

Press "C" to read the current drive. This is the drive where MENU found the current directory.

Press "O" to select any Other slot and drive. After you select a slot (1-7) and drive (1-2), the main directory on the disk in that drive becomes the Current Directory. (To select a subdirectory from that drive, press Return and then "S".)

Press "M" to select the MENU drive. This is the directory where the MENU file is stored; either the RAM disk (slot 3, drive 2), or the drive specified by KEYCAT.SETUP.

Press "S" to read a Subdirectory. This option only works if one or more Directory ("Dir") files are listed on the screen.

ERRORS
When an error occurs, pressing Esc will give you a chance to "make repairs". Most errors are caused by leaving drive doors open, putting disks in upside down, or using DOS 3.3 disks. Only ProDOS disks are allowed.

A "Device Not Connected" error when you type "-KEYCAT.80" means you don't have a IIc or 128K IIe, or your RAM disk has been disconnected. To reconnect, reboot or use FILE.MOVER (page 28).

A "Path Not Found" error when you type "-MENU" probably means that you need to specify a slot and drive (for example, type "-MENU,S3,D2" or "-MENU,S6,D1").

A "Path Not Found" error could also mean that the floppy disk with the MENU program on it has been removed. Put it back in the correct drive when you type "-MENU". (128K RAM disk users don't have to worry about this.)

HARD DISK USERS
If you have a hard disk, use KEYCAT.SETUP to configure for the appropriate slot and drive, then make this your STARTUP program after running KEYCAT.80 to create MENU:

```
10 PRINT CHR$(4)"-MENU"
```

KEYCAT.80 and GPLE
GPLE, Beagle Bros' Applesoft editor, uses Control-Reset to reconnect itself. If you want to use KEYCAT.80 with GPLE, it's best to de-activate the Control-Reset option with KEYCAT.SETUP.

Then you can add a GPLE "-MENU,S3,D2" Escape command to activate. Now a command like Esc-M will activate MENU and Control-Reset will still be available for reconnecting GPLE.

RESETTING RESET
To cancel KEYCAT.80's grip on Control-Reset, you can reboot, or type:

"POKE 1010,0: POKE 1011,190: POKE 1012,27"

MENU SIZE LIMITATIONS
The MENU program is a type "BIN" file that is 8 or more blocks in size, depending on the number of file names it contains. Its limit is 255 files.

You can look at MENU (after you have created it) by cataloging the RAM disk (type "CAT/RAM") or the appropriate floppy drive.

KEYCAT.SETUP

KEYCAT.SETUP lets you configure KEYCAT.80 to work with your specific system and preferences. Type "-KEYCAT.SETUP" to get started. You will be asked:

1. Whether or not you want Control-Reset to activate the MENU program.

2. The slot and drive where the MENU program will be stored.

Follow the instructions on the screen and select your preferences. A little experimenting doesn't hurt, because you can always reconfigure the program later. When you are finished with KEYCAT.SETUP, it will re-Save KEYCAT.80 on disk.

CONTROL-RESET OR -MENU?
Normally, you press Control-Reset to activate MENU. This method is quick and easy, but has some drawbacks. It takes some room on memory page 3, and other programs may need to use that area. No Big U programs have any conflict with KEYCAT.80 or MENU.

If you don't want to use Control-Reset, disconnect it. Now only the command "-/RAM/MENU" will activate MENU. This method is a little more cumbersome, but doesn't use any memory until MENU is actually activated. (MENU runs on hi-res page 2: $4100.6000).

SELECTING THE MENU DRIVE
On 128K Apples, the RAM disk (slot 3, drive 2) is the preferable location for MENU. Otherwise you may put it anywhere you like. The most obvious choices would be slot 6, drive 1 or 2.

Big U's AMPER Programs

Each Big U "AMPER" program gives you one or more new commands that begin with the the magic ampersand ("&") character (&STORE, &INPUT, etc.). You load or "install" each program in memory by typing a hyphen ("-") followed by the program's name. Once a program is installed, its new "amper-commands" are yours for the typing.

WARNING: LOAD ONLY ONCE!
Each AMPER program costs you a little more memory, so don't waste space by loading the same program more than once. You might want to write an installation program that runs only once. It loads the ampersand commands that you want, and then Runs the program that uses the commands. For example:

```
10 TEXT: HOME: NORMAL: REM RUN THIS
   PROGRAM ONLY ONCE!
20 PRINT CHR$(4);"-DUMP.80": REM
   LOADS BIG-U'S PROGRAM
30 PRINT CHR$(4);"-INPUT.80": REM
   LOADS ANOTHER BIG-U PROGRAM
40 PRINT CHR$(4);"-SCREEN.PRINTER":
   REM RUNS YOUR PROGRAM
```

"&" TECHNICAL NOTES:
Each ampersand program installs itself above Himem so your programs don't overwrite it.

When Applesoft encounters an "&", it jumps to location $3F5 (1013 decimal) and follows the machine-language instruction there--usually a jump (JMP) to another address.

When the ampersand programs are installed, they save the existing jump-address at $3F5-3F7 before plugging in their own. This technique, known as "daisy- chaining", lets many ampersand programs reside in memory together.

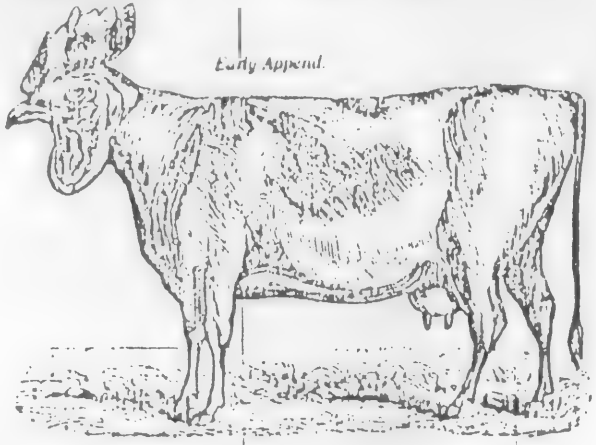
APPENDER

Install only once: Type "-APPENDER".
Function: Joins two or more Applesoft programs.
New commands:
&STORE "hides" the program in memory so you can load in a second program.
&RECALL appends the hidden program onto the end of the second program.

Example:
Let's call our higher-numbered program "HI.PROGRAM" and the other one "LO.PROGRAM". Be sure that the programs don't have overlapping line numbers. Renumber them if they do. There are several renumber programs on the market, including the one on our Double-Take disk.

1. Type "-APPENDER" (only if you haven't already).
2. Type "LOAD LO.PROGRAM" (unless already loaded).
3. Type "&STORE" to hide LO.PROGRAM. (A "Lowest Useable Line Number" message will appear.)
4. Type "LOAD HI.PROGRAM".
5. Type "&RECALL" to connect the two programs.
6. Type "LIST" to see the appended programs. This newly-created program can be run normally if the line numbers are in order.

ANOTHER USE FOR APPENDER
&STORE can also be used to temporarily hide an Applesoft program while you run another program. Type "NEW" to get rid of the test program, then "&RECALL" to get your original back.



DUMP.40 and DUMP.80

Install only once: Type "-DUMP.40" for 40 columns or "-DUMP.80" for 80 columns.
New command: &POP (stands for "Print On Paper")
Function: Prints the text screen on your printer.

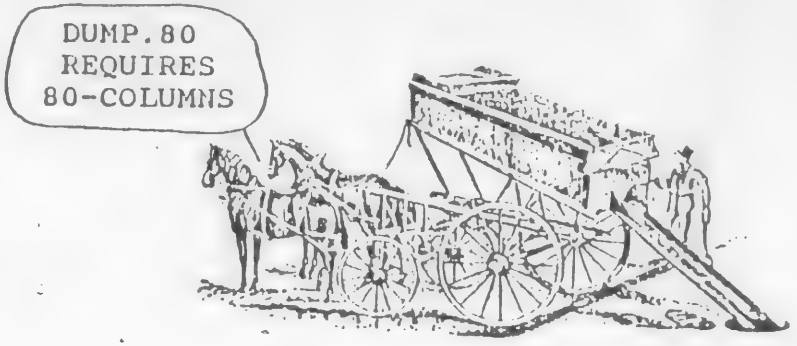
Comments: &POP is fast because it doesn't waste time printing blank spaces at the end of a line.

If you have an Apple IIc or Apple IIe with an 80-column card, you can use the new DUMP command instead (see page 48).

PROGRAM EXAMPLE:

```
10 REM DUMP.40 MUST BE IN MEMORY
15 PRINT CHR$(21): REM 40-COL SWITCH
20 FOR Y=1 TO 24: FOR X=1 TO 40: IF
   X<40 OR Y<24 THEN VTAB Y: HTAB X:
   PRINT CHR$(X+32+Y);: NEXT: NEXT
30 VTAB 1: REM ANY PROGRAM
40 &POP: REM DUMP SCREEN
50 REM CONTINUE WITH PROGRAM
```

80-COLUMN PRINTER PROBLEMS?
DUMP.80 and the DUMP command (page 48) send a carriage return to the printer after every 80 characters. If your printer does this automatically and you are getting some kind of double-spacing, here's the solution:
1. Type "BLOAD DUMP.80" (or BLOAD DUMP).
2. Type "POKE 16385,0".
3. Type "BSAVE DUMP.80" (or BSAVE DUMP).



INPUT.40 and INPUT.80

Apple IIc or 80-column Apple IIe required.

Install only once: Type "-INPUT.40" for 40 column input or "-INPUT.80" for 80 columns.
New command: &INPUT
Features:
- All visible characters are acceptable as input, including commas and colons.
- Control-characters are ignored.
- Maximum string length is programmer-definable. The standard length is 20 (if someone hasn't changed it already).
- Pressing Esc returns a null string (as in A$="") regardless of cursor position.
- Pressing Return accepts the input as it appears, regardless of cursor position.
- Pressing Control-Y clears from the cursor to the end-of the line.
- Pressing Delete deletes the character to the left of the cursor and closes the gap created. The left and right arrow keys are used normally. (If you don't have a Delete key, see next page.)

Limitations:
- String variables only (For numeric input, use the VAL function as shown in the examples).
- Screen input only (&INPUT cannot be used for getting data from a disk file).
- Insert is not available. Check the NOTES program; maybe we've added it by now.

Example:

```
10 REM INPUT.40 MUST BE IN MEMORY
15 &INPUT "TYPE YOUR NAME HERE (LAST,
   FIRST): ";A$
20 PRINT "HELLO, ";A$;"!"
```

This example works whether or not the user typed a comma between his last and first names. Normal INPUT would have cut the name short at a comma.

INPUT.SETUP

This program lets you change two key features of the INPUT.40 and INPUT.80 programs:

1. The maximum string length allowed. For example, you might want to limit someone to typing only a 5-character word.

2. The key to be used as the Delete key. For example, if your Apple doesn't have a Delete key, you might want to use control-D instead.

Type "-INPUT.SETUP" and follow the instructions on the screen. When you are finished, a new version of INPUT.40 or INPUT.80 will be saved on disk.

POKING THE MAXIMUM STRING LENGTH

Another way is to change the maximum string length is to do it with a Poke. For example, to change the maximum allowable &INPUT string length to 5:

1. Install -INPUT.80 or -INPUT.40.
2. Immediately let LOC=PEEK(1015)*256+7
3. Let MAX=5 (for a maximum length of 5)
4. POKE LOC, MAX

PROGRAM EXAMPLE:

```
10  REM INPUT.80 MUST BE IN MEMORY
20  REM AND LOC MUST HAVE BEEN SET
30  POKE LOC,10: REM LENGTH=10
40  &INPUT "TYPE A WORD: ";X$
60  POKE LOC,2: REM NEW MAX LENGTH
70  &INPUT "ENTER 2-DIGIT NO: ";TD$
80  TD = VAL(TD$): REM CONVERT STRING
    TO NUMERIC VARIABLE
90  PRINT X$, TD * 2: GOTO 30
```

SUPER.POKE

Install only once: Type "-SUPER.POKE".
New command: &POKE
Function: Allows an easier way to poke a range of memory or a string of numbers from Applesoft. A demo program resides semi-hidden on the Big U disk. Type "-COPYRIGHT.1985" to see it.

FILL A RANGE OF MEMORY
Syntax: &POKE start, end, value
"start", "end" and "value" can be literal numbers or variables.

```
10 REM EXAMPLE #1: FILL A LINE
15 FOR X=0 TO 255
20 &POKE 1024,1063,X: NEXT
```

```
10 HGR: REM EXAMPLE #2: FILL HI-RES
20 VTAB22: INPUT "NUMBER (0-255):";X
30 &POKE 8192,16384,X: GOTO 20
```

POKE A STRING OF NUMBERS
Syntax: &POKE start, value1, value2, etc.
"value1" and "value2" can be literal numbers or variables. This routine is useful for replacing lengthy For-Next loops which read Data statements and Poke in values.

Example: &POKE 1024,193,194,195 prints "ABC" in on the screen. 1024 is the upper left of the screen. 193, 194 and 195 is ASCII for "ABC".

And, adapted from Tip Book #7:

```
10 HGR2: HCOLOR=3: &POKE768,0,0,96,
   173,48,192,136,208,4,198,1,240,8,
   202,208,246,166,0,76,3,3,96
20 HPLOT 0,0: FOR P=1 TO 254 STEP 3:
   &POKE 0,P,4: CALL 771: HPLOT TO
   INT (RND(1)*P),.7*P: NEXT
```


Big U's COMMAND Programs

Each Big U Command program gives you at least one new ProDOS command. All commands are loaded or "installed" by typing a hyphen ("-") followed by the file name. The new commands may then be used just like regular ProDOS commands-- from immediate mode (the keyboard) or from deferred mode (within a program) preceded by PRINT CHR$(4).

WARNING: LOAD ONLY ONCE!
Never load (or "install") the same command more than once. Not only will you waste memory, but ProDOS might hang up in an endless loop which can only be broken by rebooting. Type "-BASIC.SYSTEM" to start over and get rid of extra commands.

COMMAND SYNTAX
Items in [square brackets] are optional.
Items in UPPER CASE must be typed as shown.
Items in lower case are parameters supplied by you.

ANYCAT

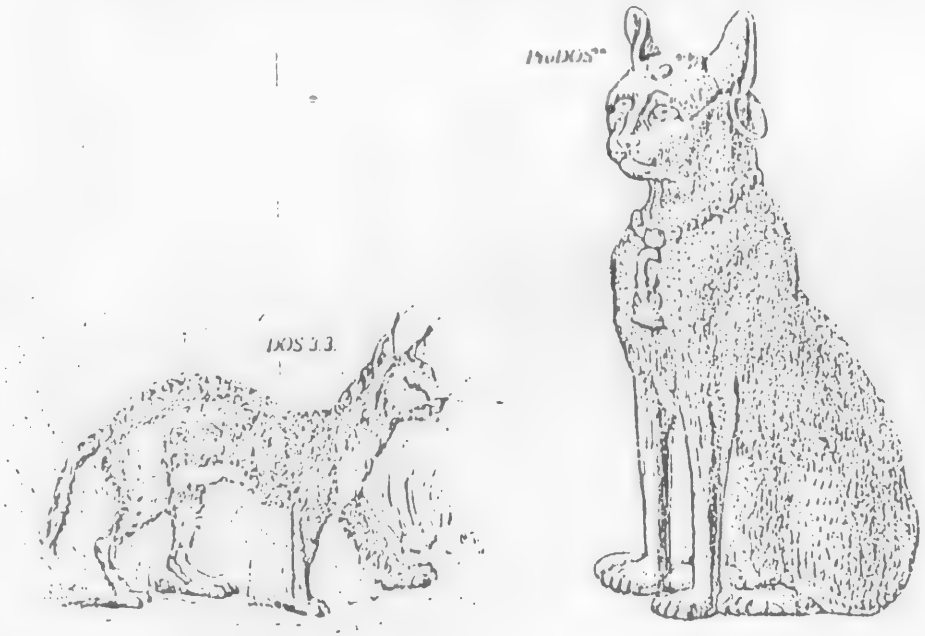
Install only once: Type "-ANYCAT"
New command: ANYCAT
Function: Catalogs DOS 3.3 disks under ProDOS control.

Syntax: ANYCAT [,S slot] [,D drive]

Comments: DOS 3.3 deleted files will be displayed as file type "D". An inverse character will appear to the far right of each deleted file name. When the catalog pauses, press Esc to exit, or any other key to see more files.

If a ProDOS disk is present, the normal "CAT" command will take over. If a prefix is set, it will be used instead of the slot and drive.

Example: Type "ANYCAT,S6,D2" to catalog the DOS 3.3 disk in slot 6, drive 2. If a ProDOS disk is there, a "CAT" command will be executed.



COPY and COPY.1

Install only once: Type "-COPY" or "-COPY.1"
Use *COPY.1* if you only have *one* drive.
New command: COPY
Function: Copies files from disk to disk.

Syntax: COPY pathname1, pathname2

Comments: "pathname1" is the file to be copied, and "pathname2" is the file to be created. "pathname2" cannot be an existing file.

COPY.1's COPY requires 2 full pathnames (both starting with "/"). *COPY's* COPY, however, will substitute the current prefix if you don't supply it (see last example on this page).

Directory (DIR) files cannot be copied.

You cannot COPY between disks with the same name. You may, however, quickly rename disks by typing a command like "RENAME /DISKA,/DISKB".

Examples:

Type "COPY /BIG.U/COPY, /MY.DISK/COPY" to copy COPY onto your disk.

Type "COPY FILE, FILE.A" to make a backup copy of a file on the same disk.

In programs, you may use strings as pathnames:

```
10 PRINT CHR$(4);"COPY";A$;",";B$
```

With COPY (not COPY.1), you may take advantage of the current prefix. For example, there are two ways to copy TEST from /DISKA to /DISKB:

1. Type "COPY /DISKA/TEST, /DISKB/TEST".

2. Or type "PREFIX, D2" (DISKB's location). Then type "COPY /DISKA/TEST, TEST".

DUMP

80-column Apple IIe or IIc required

Compatibility: See Comments below.
Install only once: Type "-DUMP"
New command: DUMP
Function: Type "DUMP" to print the entire text screen to a slot 1 printer. DUMP determines whether 40 or 80 columns are being viewed, and prints accordingly. Press Esc to stop early.

Comments: DUMP is compatible with Apple IIe's and most 80-column IIe's. Use the DUMP.40 program (page 39) if you don't have an 80-column display, or use DUMP.80 if your 80-column card doesn't work with the DUMP command. See page 39 if you get blank lines in your 80-column dumps.
DUMP won't let you crop or print graphics. Use Beagle Bros' Triple-Dump disk instead.

Example: Type "CAT" in 40 or 80 columns. Then type "DUMP" to send the screen to the printer.

EST

PRODOS 1.1.1 required

Install only once: Type "-EST".
New commands: ERASE, SPACE and TIME

Type "ERASE" to effectively erase the Applesoft program in memory (RENEW should restore it), reset all Applesoft pointers and the ProDOS bit map, turn off 80 columns and execute NORMAL, TEXT and SPEED=255. ProDOS commands added after EST was installed will be lost when you type "ERASE". ERASE is similar to 3.3's FP command.

Type "SPACE" to show the disk volume name and free space for the disk in the last drive accessed. Do not use this command from inside a program.

Type "TIME" to display the time and date stored in memory. This command cannot change the values; to do that, use the DATE.SET program (page 63). If your Apple has a clock, you can use TIME in a program like this:

```
10 VTAB 1: HTAB 24: PRINT CHR$(4);
   "TIME": GOTO 10
```

HEX

Install only once: Type "-HEX".
New commands and functions:
XC: Hex/dec/bin converter (page 50)
XD: Memory disassembler (page 50)
XP: Register and flag displayer (page 51)
XS: Hex/Ascii memory scanner (page 51)

Comments: Any leading "X" is considered to be a command when entered from the keyboard, so type a colon before defining variables that start with X (not necessary from within programs). For example, with HEX installed, if you type "X=5", you'll get a ProDOS "Syntax Error" message. Typing ":X=5" will works normally.

HEX.H

PRODOS 1.1.1 required

HEX.H is the same as HEX (above), but it "hides" inside BASIC.SYSTEM from $BB4C.BC79 so that no programming memory is used.

HEX.H may be added to BASIC.SYSTEM so that it is installed when you boot, at no cost in memory:

1. Boot a backup copy of the Big U disk.
2. Type "-HEX.H" to install HEX.H.
3. Type "CALL -151" to enter the monitor.
4. Type "BLOAD BASIC.SYSTEM,TSYS,A$2000".
5. Type "454C<BB4C.BC79M" to move HEX.H into BASIC.SYSTEM.
6. Type "4707: 50 BB" to point the external command to HEX.H.
6. Type "BSAVE BASIC.SYSTEM,TSYS,A$2000".
7. Reboot and try some HEX commands.

Negative numbers will not be shown in the result when XC (next page) is used with HEX.H, although negative numbers may still be entered.

XC (HEX command 1 of 4)

Function: Convert a number to hexadecimal, binary, decimal and negative decimal.
Syntax: XC [,E number]

Comments: "number" is any decimal number from 0 to 65535, any hex "$" number from $0 to $FFFF, or any negative decimal number from -1 to -32768. Typing 'XC" without a number will repeat the last number converted. HEX.H's XC will not convert to negative decimal.

Example: Type "XC,E-151" to convert -151 to hex, binary, decimal and negative decimal. The same result would be achieved by typing "XC,E$FF69" or "XC,E65385".

XD (HEX command 2 of 4)

Function: Disassemble memory. This is an enhanced version of the monitor List command.
Syntax: XD [,E address] [,L lines]

Comments: "address" is the decimal or hex location where you want to start disassembly. "lines" determines how many lines (1-255) will be disassembled. Because a line can contain 1 to 3 three bytes, the actual amount of memory disassembled will vary. If you specify a large number of lines, you can pause the listing by pressing Control-S. Any key continues. Typing "XD" will repeat the last disassembly.

Example: Type "XD,E$FBD9,L11" to see the speaker beep code. Continue viewing 11-line segments of memory by typing "XD,E address" only.

Free Tip: To print a machine language listing, preview it on the screen using the XD command. When you see what you like, type "PR#1" and then "XD" to repeat the listing on your printer.

XP (HEX command 3 of 4)

Function: Display the 6502 registers and flags.
Syntax: XP
Example: Type "XP". The screen will show:

```
A=04 X=8C Y=00 P=2B S=98
  NV-BDIZC
P=00101011
```

Comments: A,X and Y are registers; P is the processor status register and S is the stack pointer. The processor is repeated in binary. Its flags from left (bit 7) to right (bit 0) are: N (negative), V (overflow), "-" (unused), B (break), D (decimal), I (interrupt), Z (zero), and C (carry). Bits are considered set if 1, or clear if zero. For example, a BCS (Branch on Carry Set) instruction would branch if a "1" appears under the "C".

The register values are taken from the storage area at $45.$49. To see what flags are set when P=9, just type "POKE 72,9" followed by "XP"; or type "CALL -151" followed by "48:9" and "XP".

XS (HEX command 4 of 4)

Function: Scan memory in hex and ASCII.
Syntax: XS [,E address] [,L lines]

Comments: "address" is the starting address of memory, and "lines" is the number of lines displayed (independent of the bytes per line).

XS displays 8 bytes per line on a 40-column screen, and 16 bytes per line in 80 columns.

"XS" with no parameters repeats the last scan.

Example: Type "XS,E$B878,L20" to see the ProDOS command table. Typing "XS,E address" will then continue to show 20-line segments of memory.

MON

PRODOS 1.1.1 required

Install only once: Type "-MON"
New commands: MON and NOMON
Function: Turn ProDOS monitoring on and off (similar to 3.3's MON and NOMON commands).

The MON command will echo the following ProDOS commands to the screen: CREATE, OPEN, READ, WRITE, CLOSE, FLUSH and DELETE. For text files, data being input after a READ or printed after a WRITE will also be shown on the screen.

CREATE, DELETE and OPEN will show the pathnames involved. The others will give the pathnames for the first two open files, and open files from 3 to 8 will be referenced by number.

Syntax: MON [,R rate]
Syntax: NOMON
"rate" is either 0 (zero) or 1. Use zero for continuous operation and 1 for single-step (press a key to continue). If NOMON has been used, typing "MON" will return to monitoring with the same "rate" setting used previously.

Examples:
Type "MON". Now type an illegal command like "CAT3" to see ProDOS's "Close All", "Flush All" and "Syntax Error" messages.

Type "MON,R1" followed by "CAT" to single-step through a catalog listing. Type "MON,R0" to return to continuous MONitored operation.

Type "NOMON" to turn off monitoring.

IMPORTANT: Turn MON off, reboot or type "BYE" before using a SYS program like Apple's FILER.
Why? Because MON intercepts MLI calls at $BF00 in the ProDOS global page. The original addresses are reset by NOMON, and by MON when "BYE" is used.

ONLINE

Install only once: Type "-ONLINE"
New command: ONLINE
Function: Lists the current ProDOS volume names for each of your drives. If slot and drive are specified, only that drive is checked.

Syntax: ONLINE [,S slot] [,D drive]

Examples:
Type "ONLINE" to display volume names for all drives. Or type "ONLINE,S6,D2" to display the volume name for slot 6, drive 2 only.

SEE

Install only once: Type "-SEE"
New command: SEE
Function: Lets you view any program on a disk without loading it.

SEE will print text (TXT) files as well as Applesoft program (BAS) files. Other file types may be dumped too, but not as effectively.

Syntax: SEE pathname [,S slot] [,D drive]

Comments: "pathname" is any filename.
Press any key to pause a listing, followed by Esc to exit, or any other key to continue.

Examples:
Type "SEE/BIG.U/STARTUP" to display Big U's Applesoft (BAS) startup program.

You can use SEE in a program (Esc to quit):

```
10 PRINT CHR$(4)"SEE PRODOS,S6,D1"
```

PRODOS is a binary (SYS) file. Text (TXT) files look better, but there are none on the Big U disk.

SHOW

Install only once: Type "-SHOW"
New command: SHOW
Function: Load a normal hi-res image from disk and/or reveal the hi-res screen without clearing it.

For double hi-res, use SHOW.WIPE (next page).

Syntax: SHOW [pathname] [,A page] [,F format] [,S slot] [,D drive]

"pathname" is the name of a picture to see.

"page" is a number: 1=page 1, 2=page 2

"format" is a number: 0=full graphics, 1=mixed graphics and text. If no format value is given, 0 is assumed.

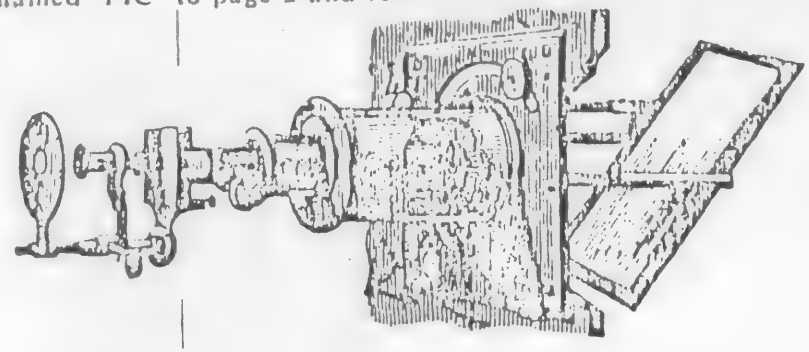
Examples:

Run the file called "RANDY.BRANDT" to see a demo of how SHOW can be used.

Type "SHOW,A1" to reveal all of hi-res page 1 without erasing it (works like HGR, but doesn't erase and doesn't include four text lines).

Type "SHOW" to reveal the last screen accessed (full graphics, no text).

Type "SHOW PIC,A2" to load a hi-res picture named "PIC" to page 2 and reveal it.



SHOW.WIPE

Apple IIc or 128K IIe required

Install only once: Type "-SHOW.WIPE"
New commands: SHOW and WIPE

SHOW (SHOW.WIPE command 1 of 2)

Function: Loads a single or double hi-res image from disk and/or reveals the normal or double hi-res screen without clearing. SHOW works only with Beagle Graphics' two-file picture format.

Syntax: Same as on previous page, except a third "page" parameter is allowed: 1=hi-res page 1, 2=hi-res page 2, 3=double hi-res.

For double hi-res picture names, SHOW expects the second file to end in ".AUX".

Examples: Type "SHOW DOUBLE,A3" to load the files "DOUBLE" and "DOUBLE.AUX" and display them as one double hi-res picture. Or simply type "SHOW,A3" to reveal the double hi-res screen.

WIPE (SHOW.WIPE command 2 of 2)

Function: Reformats (erases) the ProDOS RAM disk.

Syntax: WIPE [,A3]

Comments: "WIPE" reformats /RAM. "WIPE,A3" does the same, but also saves hi-res page 1 in a /RAM file called "DHGR.AUX", thus protecting double hi-res graphics memory from being overwritten. It also protects future /RAM files from being overwritten by double hi-res graphics.

Examples:

Type "WIPE" to erase all /RAM files. Type "CAT/RAM" to see the blank directory.

Load a normal hi-res picture to page 1. Now type "SHOW,A3" followed by "WIPE,A3".

XLISTER

Install only once: Type "-XLISTER"
New command: XLIST
Function: Displays Applesoft programs in improved list format. Each statement is listed on a new line. For-Next loops are indented, and statements following IF's are marked with a "*". See the sample printout on the next page.

Syntax: XLIST [*] [line number or range]

Specify single lines or ranges just like in Applesoft's LIST command. Because XLIST is a ProDOS command, it can be entered in lower case (and even be used from the monitor!).

Type "XLIST*" to list to a printer in slot 1. With printer listings, you get page breaks and page numbers. If your program starts with a REM statement, that statement will appear as a header at the top of each page. If you're using ProDOS 1.1.1, XLISTER will automatically print the date and time in each header.

Examples: Type "XLIST -100" to display lines 0-100 on the screen. Or type "XLIST* 10,20" to send lines 10 through 20 to your printer.

In the example program below--
You can type "RUN" to RUN it.
You can type "RUN2" to SAVE it.
You can type "RUN1" to XLIST it to printer.
Each page of the printer listing will have line 0's REM printed on the top. To print only part of the program, add the line range to line 1.

```
0  GOTO 3: REM SAMPLE
1  PRINT CHR$(4);"XLIST*" : END
2  PRINT CHR$(4);"SAVE SAMPLE": END
3  REM PROGRAM STARTS HERE
```


Sample Program XLISTing:

```
.....
10    REM CUSTOM.LIST.DEMO
.....
15    HGR
     :HOME
     :PRINT CHR$(21)
     :VTAB 22
     :NORMAL
.....
20    FOR X=0 TO 279
     :  POKE 228,99+X/99
     :  HPLOT 0,0 TO X,159
     :  IF X<160 THEN GOSUB
          90
*    :  HPLOT 0,0 TO 279,X
*    :  GOTO 30
.....
25       GOSUB 100
.....
30    NEXT
     :HTAB 1
     :PRINT "DONE";
     :CALL -868
     :END
.....
90    VTAB 22
     :HTAB 1
     :PRINT "DRAWING: ";X;
     :RETURN
.....
100   HTAB 1
     :PRINT "ALMOST DONE: ";
          X;
     :RETURN
```

These two statements will only be executed if the IF above is true

FOR PRINTER EXPERTS ONLY
XLISTER contains eight printer enhancement bytes which may be used to turn on printer options such as compressed, bold, etc. Here's how to use them:

1. Type "BLOAD XLISTER".
2. Get out your printer manual and look up the hex codes for the desired printer options.
3. Type "CALL-151" to enter the monitor.
4. Type "4599:00 00 00 00 00 00 00 00", replacing the 00's with the proper codes.
5. Type "CALL 16384" to install the modified XLISTER, or type "BSAVE XLISTER" to make the changes permanent.

BEEPERWORKS

AppleWorks required

This program is for AppleWorks users only (versions 1.1 or 1.2). Even though we don't get paid to endorse AppleWorks, we'll let it be known that we use it for all of our word-processing needs. Its error beep, however, can get just a little annoying, especially when you make as many errors as we do. Thanks to BEEPERWORKS, your ears can at least get a little variety.

USING BEEPERWORKS

1. Type "-BEEPERWORKS" and a familiar screen will appear. Insert a working copy of your AppleWorks Startup disk (not the Program disk), and follow the instructions on the screen. If you can use AppleWorks, you can use this program.

2. Select option 2 from the main menu. The Beep Change Menu will be displayed, with values for the beep's pitch, duration and pause. Three sets of these values are shown; the current values, the boot-up values (stored on your disk), and AppleWorks' original values.

3. Do some experimenting, and pick the beep you like. We like the pitch at 20, the duration at 180, and the pause at 50. Pick your own beep.

4. When you're done, use the main menu save option to make your new beep a "permanent" part of AppleWorks.

Hats off to AppleWorks for being unprotected!

BIGLINER

BIGLINER is used to give your Applesoft programs "illegal" program lines numbered 65535. This prevents the average human from deleting or otherwise messing with those program lines, unless of course, he or she has a copy of BIGLINER! Line 65535 is commonly used to store Copyright notices in Rem statements.

For some reason, Applesoft does not allow line numbers higher than 63999. Therefore, line 65535 cannot be deleted. No Goto's, Then's or Gosub's can access it either, but the program will work normally otherwise.

USING BIGLINER

Load a backup copy of an Applesoft program and try the following steps:

1. Type "-BIGLINER". You will see a menu offering you four choices, followed by a listing of the highest legally-numbered line (if there is one).

2. Press "L" to list the entire Applesoft program. Pause with Control-S, or quit with Control-C.

3. Press "R" to raise the listed line number to number 65535. The highest legal line listed will be replaced.

4. Press "L" to list the program. The last line listed will now be 65535.

5. Press "C" to change the first line 65535 to 63000. If line 63000 is present in the program, the next available line number will be used. BIGLINER only changes the line numbers themselves; it doesn't check to see if the line is referenced by another statement.

6. To quit, press "Q".

CAT.DATER

PRODOS 1.1.1 required

This is a small Applesoft program that makes the current ProDOS date and time appear following the directory name at the top of each catalog. If you don't have a clock/calendar in your Apple, use the DATE.SET program (page 63) to set the date first.

USING CAT.DATER
Type "-CAT.DATER". Then type "CAT" or "CATALOG" to see the date in your catalog.

TECHNICAL NOTES:
CAT.DATER is relocatable, so its address (variable AD in line 10) may be changed if you want to use page 3 of memory for other purposes. The existing setting allows it to be compatible with the CAT.FIXER (next page) and CAT.STEPPER (below).

CAT.STEPPER

PRODOS 1.1.1 required

This program modifies the catalog routine so that you can "step" through a directory one or more files at a time.

USING CAT.STEPPER
Type "-CAT.STEPPER" to install the routine. Now your catalogs will pause every 19 files, about one screenful. Press the space bar to step one file at a time, or any other key to continue. Control-C exits the catalog, as usual.

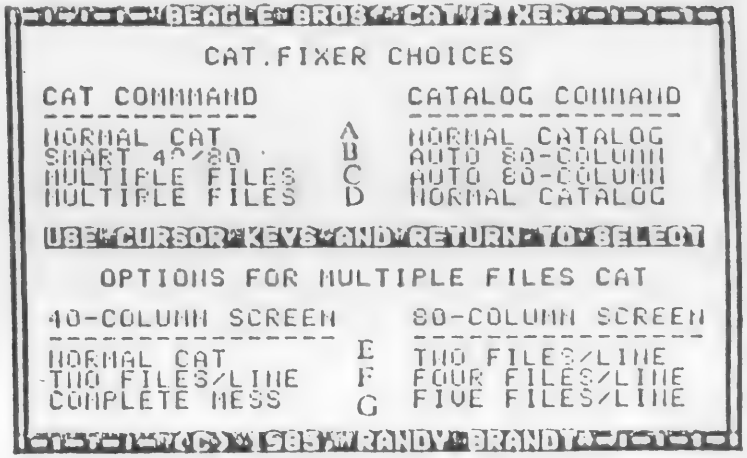
ADJUSTING CAT.STEPPER
You may adjust the number of file names between pauses by Poking a number into location 838. For example, typing "POKE 838,5" would pause every 5 file names.

CAT.FIXER

PRODOS 1.1.1 required

This program lets you enhance the functions of the "CATALOG" and "CAT" commands. The "Multiple File" options are handy for printer printouts of catalogs in multiple columns.

USING CAT.FIXER
Type "-CAT.FIXER" to get the program going. For reference, we have added letters A through G to the screen below:



1. CAT/CATALOG OPTIONS (top half of screen):
   Use the arrow keys to move the flashing pointer to the set of options (A, B, C or D) that you want. (If your Apple can't display 80-columns, only options A and D are appropriate.):

   A: CAT acts normal.
   CATALOG acts normal.

   B: CAT acts like CATALOG if 80-columns visible.
   CATALOG auto-switches to 80-column screen.

   C: CAT makes multiple-columns.
   CATALOG auto-switches to 80-column screen.

   D: CAT makes multiple-columns.
   CATALOG acts normal.

Press Return to select option A, B, C or D. If you select option A or B, skip to step 3. Selecting options C and D will move the pointer down to the bottom half of the screen. Press Esc to exit the program.

2. MULTIPLE-FILE OPTIONS (bottom half of screen): The options on the lower half of the screen apply to the CAT command only. Use the arrow keys to move the pointer to the set of options (E, F or G) that you want:

   E: 40-columns: normal CAT.
   80-columns: 2 file names per line.

   F: 40-columns: 2 file names per line.
   80-columns: 4 file names per line.

   G: 40-columns: Unreadable
   80-columns: 5 file names per line.

   Press Return to select option E, F or G; or press Esc to go back to options A, B, C and D.

3. DEMO: Press "D" to test your new CAT or CATALOG display. Or press Esc to skip the demo. Press Esc once more to quit the program.

NORMALIZING CAT AND CATALOG
CAT.FIXER alters ProDOS's Catalog function in memory. To get things back to normal, type "-CAT.FIXER" and select option A. Or reboot, or type "-BASIC.SYSTEM".

DATE.SET

ProDOS 1.1.1 required

If you don't have a clock/calendar for your Apple, use this program to set the date and time which will appear next to your saved file names (instead of "<NO DATE>").

USING DATE.SET
1. Type "-DATE.SET" to load the program.
2. Type "CALL 20000" to run it.

When you CALL 20000, the current date and time in memory will be displayed. If no valid date is present, the date stored in DATE.SET itself will appear.

CHANGING THE VALUES
Press the Left and Right Arrow keys to highlight the day, month, year, hours or minutes. Then press the Up and Down Arrows (or A and Z) to increase or decrease each one. (A "<NO DATE>" option lies between December and January.) When you're satisfied, press Return. Or press Esc to exit with the original values restored.

A DATE.SET BOOT-UP PROGRAM:
Here is a sample time-set program that you could save under the name "STARTUP" so it will run each time you boot a particular disk:

```
10 D$=CHR$ (4): HOME: DS=20000: REM
   DS = DATE.SET ADDRESS
20 PRINT D$"-DATE.SET": CALL DS: REM
   GET DATE AND USER RESPONSE
30 IF PEEK(DS-1)<>0 THEN PRINT
   D$"BSAVE DATE.SET"
40 REM CONTINUE WITH PROGRAM
```

Line 30 in the program above saves DATE.SET with the new date if a change has occurred. With this program on your boot disk, the last boot date will always be given as the default value.

In case you're interested, DATE.SET stores a zero in byte 19999 if the user exits with a date identical to the one stored in DATE.SET.

DISK.COPY.MORE

Extra K required

DISK.COPY.MORE is a program which modifies Extra K's DISK.COPY program to work with 38-track (instead of normal 35-track) disks (see pages 29 and 31). If you don't have Extra K, go buy it. We'll wait here.

USING DISK.COPY.MORE

Type "-DISK.COPY.MORE" to run the program. When prompted, insert the Extra K disk and press Return. If you only have one 38-track drive, you must use a one-drive copy and do some disk swapping. To make things easier, put DISK.COPY.MORE and DISK.COPY on a 38-track disk along with a 304-block version of ProDOS (page 31).

CHANGING DISK.COPY.MORE FOR 40 TRACKS

If you have a special 40-track drive, here's how to upgrade DISK.COPY.MORE to work with it:

1. Type "BLOAD DISK.COPY.MORE".
2. Type "CALL -151".
3. Type "404A: 28" (Hex for 40).
4. Type "40A9: 34 30" (ASCII for 40).
5. Type "BSAVE DISK.COPY.MORE".

If you want, you can look up your own hex and Ascii values for 39 or 8-track drives and plug them in.

Early Disk Copier

ERROR.EDITOR

ProDOS 1.1.1 required

Type "-ERROR.EDITOR" to change any of ProDOS's 19 error messages. The standard error messages will be displayed on the left half of the screen. The right side will show "-SAME-" if the message has not been changed.

CHANGING ERROR MESSAGES

1. Press "E" to begin editing. The center message will be highlighted by an inverse bar.

2. Use the arrow keys to move to the message you wish to change. Then press Return.

3. Type your new message. You may use letters of the alphabet (except J, Q & Z); and the characters "/", "(", ")", ".", and ":". Press Esc if you don't want to change the message, or press Return when you're done.

4. Select another message to edit if you want, or press Esc to leave edit mode.

The words at the bottom of the screen tells you:

LENGTH of your new message as you type it (20 characters maximum).

AVAILABLE NIBBLES for your message. A nibble is half a byte. Some characters count as one nibble, and some count as two. A click will be heard whenever a two-nibble character is entered or deleted. Your message is limited to the available nibbles or 20 characters maximum.

ALTERED is the number of messages changed so far.

UPDATING BASIC.SYSTEM
If you quit ERRGR.EDITOR, your new error messages will be in effect until you reboot. (Test them with an illegal command or two.) If you want the new messages to be in effect every time you boot, you will need to update BASIC.SYSTEM on your boot-up disk:

1. Press "U" to update ProDOS's BASIC.SYSTEM file. You will be asked "UPDATE DISK IN DRIVE 1? (Y/D)".

2. Press "Y" to update BASIC.SYSTEM in the main directory of slot 6, drive 1. Or press "D" to toggle between drives 1 and 2. Press any other key to skip updating.
   Note: If you have renamed BASIC.SYSTEM, change the variable S$ in line 5.

RESTORING ORIGINAL ERROR MESSAGES
Press "N" from the editor menu to normalize the messages in memory. Then press "U" to normalize the messages on disk.

EXITING
Leave the editor by pressing "Q" for Quit. Type "RUN" to restart the program with your altered error messages intact.

ABOUT TESTING ERROR MESSAGES
To test ProDOS's "Syntax Error" messages, type something illegal like "CAT3". Typing something illegal like "COTALOG" will give you Applesoft's "?Syntax Error" message instead. You can't change this message, unless you buy a copy of our Beagle Basic disk.

RAM.SAVE

Apple IIc or 128K IIe required

RAM.SAVE will copy all of your current RAM disk files onto a floppy disk in seconds, providing "permanent" storage for them. RAM.LOAD (next page) will load the files back into /RAM.

USING RAM.SAVE

1. Save a few files on /RAM in slot 3, drive 2.

2. Type "-RAM.SAVE".

3. Insert an erasable formatted disk into slot 6, drive 1 (or the drive you are set up for--see page 69). Warning: All previous files on the floppy will be erased.

4. Press Return. All of the /RAM files will be copied onto the floppy disk. Until you reformat it, this disk will not hold more than 119 blocks (about half of normal).

5. Catalog the floppy. It is now called "/RAM", and contains the same files as the original /RAM in slot 3, drive 2.

WHAT'S A RAM DISK ANYWAY?
A phantom disk named "/RAM" lives in imaginary slot 3, drive 2 of 128K Apples with ProDOS. It has the advantage of letting you load and save files into memory at lightning speed. The problem is, RAM disk files disappear when the power goes off.

The RAM disk works just like any disk, except it is fast and only holds 119 blocks-worth of files. To test your RAM disk:

1. Load a program.
2. Type "SAVE /RAM/FILENAME".
3. Type "CAT/RAM" or "CAT,S3,D2".
4. Or type "PREFIX/RAM" followed by "CAT".

Get the picture? If not, you probably don't have 128K or you're not working with ProDOS.

RAM.LOAD

Apple IIc or 128K IIe required

RAM.LOAD loads files into /RAM from a floppy disk created by RAM.SAVE (previous page).

USING RAM.LOAD

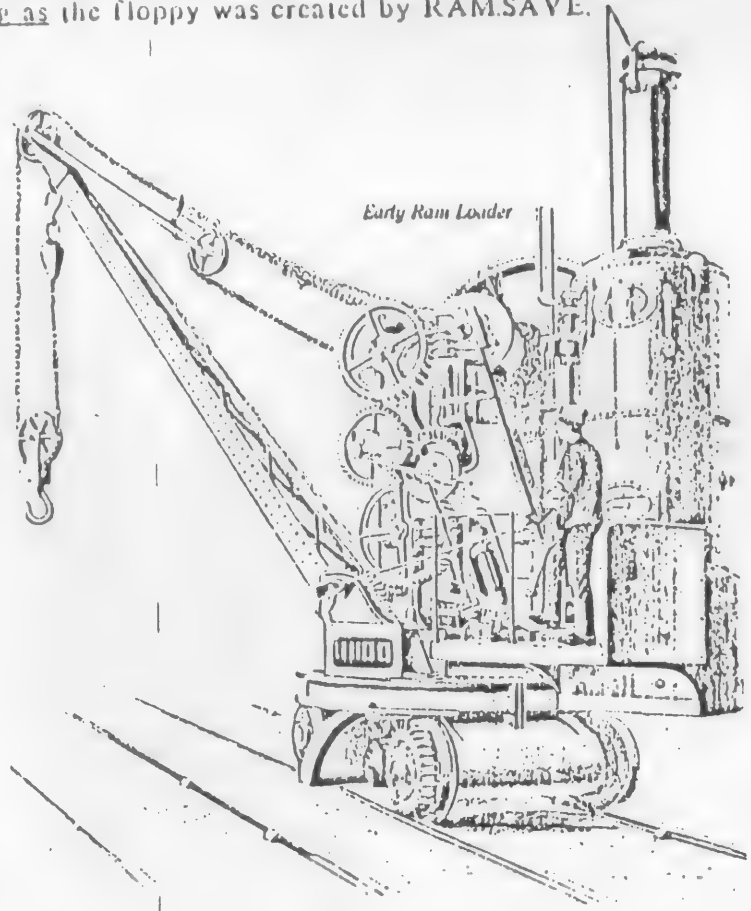
1. Type "-RAM.LOAD".

2. When prompted, insert your special floppy disk that was created with RAM.SAVE.
   Warning: use only special /RAM disks created by RAM.SAVE or semi-disaster will surely result!

3. Press Return to load all of the special floppy's files into /RAM.

FLOPPY /RAM NOTE

You may add to or delete files from the /RAM floppy as long as the floppy was created by RAM.SAVE.



Early Ram Loader

RAM.SETUP

This program lets you configure the RAM.SAVE and RAM.LOAD programs for the following two characteristics:

1. The slot and drive that files will be copied to and from.

2. Whether or not you want the program to pause and prompt you to insert a disk. The pause option prompts you to insert the /RAM floppy and press Return before file copying begins. The no-pause option immediately begins reading and writing data. Use the no-pause option only if RAM.LOAD will be used on the /RAM floppy. Then you can insert it, type "-RAM.LOAD" and everything else will be automatic.

USING RAM.SETUP

1. Type "-RAM.SETUP".

2. Follow the instructions on the screen.

RENAMING TIP

You may want to rename RAM.LOAD and RAM.SAVE to reflect the slot and drive selected. For example, RAM.SAVE.S6.D2 could be the version that works with drive 2. To do this, insert your own diskette before saving the configured program. After it's saved, type "RENAME RAM.SAVE, RAM.SAVE.S6.D2".

RENEW

RENEW is a short routine for restoring Applesoft programs which have been zapped by a "NEW" command. Type "-RENEW" immediately after "NEW" has been typed. If it works, hooray! If not, retype your program.

RUN.COUNTER

This program will print the date your Applesoft program was last Run and the number of times it has ever been Run, each time it is Run. You need to append your program to ours. Here's how you do it:

1. Type "-APPENDER" (unless the APPENDER program is already in memory).
2. Type "LOAD RUN.COUNTER".

3. Type "&STORE" to hide the program.
4. Load the Applesoft program that you want to use with RUN.COUNTER.
5. Make sure your program has no program lines numbered lower than 9.
6. Type "&RECALL" to append the two programs.

7. Change the value of P$ in line 1 to the name of your program. For example: 1 P$="MY.FILE"
8. Re-save your program using the name in line 1.

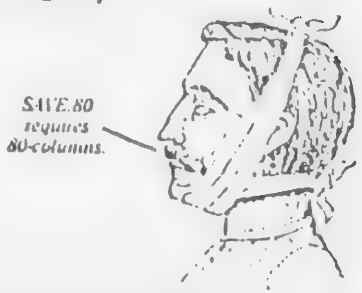
Your program is now ready to use. Every time it is Run, the program name will be printed on the screen with the Run number and last-used date. After you enter today's date, the Rem in line zero will be updated and the program will be re-saved under the name defined by P$.

To prevent the Run number from printing, delete program line 4. To prevent the date from printing, delete line 5.

SAVE.40 and SAVE.80

These programs let you save 40- and 80-column text screens on disk. You may view the saved screens by typing a hyphen followed by the name of the saved screen. 80-column files are compatible with those created by CRT.WRITER (page 9).

USING SAVE.40
1. Bload SAVE.40
2. CALL 20134



USING SAVE.80
1. Bload SAVE.80
2. CALL 20010

After the CALL, the screen will be copied to a buffer on hi-res page 2, and you will be asked for a file name (a legal ProDOS pathname, which may include slot and drive). The screen will then be saved. To prevent your typed message from being saved, you should always save screens from within your programs. For example:

```
10 PRINT CHR$(4)"BLOAD SAVE.80"
20 FOR I=1 TO 20: PRINT "STUFF ALL
   OVER THE 80-COLUMN SCREEN.": NEXT
30 CALL 20010 : REM SAVE SCREEN
40 REM CONTINUE WITH PROGRAM
```

Now that you've saved a screen or two, type "HOME" and then "-filename" (substitute your saved screen's name for "filename"). Loading an 80-column screen automatically switches to 80-column display. Try this mini-example:

```
1  PRINT CHR$(4)"-FILE.NAME" : REM
   USE THE APPROPRIATE FILENAME
2  HOME : GET X$ : CALL 20366 : REM
   USE CALL 20416 FOR 40-COLUMNS
3  GET X$ : GOTO 2 : REM PRESS
   CONTROL-RESET WHEN YOU GET BORED
```

The CALL in line 2 keeps recopying the screen from its buffer.

PRODOS COMMAND SUMMARY

This summary assumes that you are familiar with DOS 3.3 commands. Examples given with leading line numbers are program examples. The following codes and parameters are used:

[square brackets] indicate optional values
pathname must be a legal ProDOS file name (and may include a subdirectory name or prefix)
filetype is a file type like BAS, SYS, etc
x is a legal hex or decimal number

ProDOS Parameters
(all but T may be specified in hex or decimal):
A = starting address in memory
B = byte offset from start of file
D = drive (1 or 2)
E = ending address in memory
F = field number in a file
L = length of memory segment
R = record number in a file
S = slot (0-7)
T = type of file (three-letter code)
@ = Applesoft program line number

APPEND *pathname* [,T*filetype*] [,Lx] [,Sx] [,Dx]

Function: Add data to the end of an existing file. Used instead of Open and Write.

Example: 40 PRINT CHR$(4)"APPENDIX" causes any following Print statements to add data to the end of the file IX.

BLOAD *pathname* [,Ax] [,Bx] [,Lx or ,Ex] [,T*filetype*] [,Sx] [,Dx]

Function: Load a file (usually type BIN) at A.

Example: BLOAD PICS/HI.RES,A$2000 loads hi-res page 1 with the picture HI.RES from subdirectory PICS.

BRUN *pathname* [,Ax] [,Bx] [,Lx or ,Ex] [,Sx] [,Dx]

Function: Load and run a binary program.

Example: BRUNO,S6,D2 loads and runs file O from drive 2.

BSAVE *pathname* [,Ax] [,Lx or ,Ex] [,Bx] [,T*filetype*] [,Sx] [,Dx]

Function: Save L bytes of memory starting at address A.

Example: BSAVE PROGRAM,A$300,E$350 saves the binary program in memory at $300.350. BSAVE PROGRAM,A$300,L$51 works, too.

BYE

Function: Quit BASIC.SYSTEM, allow user to select next application (must be a SYS file).

CAT [*pathname*] [,T*filetype*] [,Sx] [,Dx]

Function: Catalog directory in 40 columns.
Example: CATNIP,TBAS catalogs subdirectory NIP, displaying BAS (Applesoft) files only.

CATALOG [*pathname*] [,T*filetype*] [,Sx] [,Dx]

Function: Same as CAT, but displays 80 columns of information.

CHAIN *pathname* [,@x] [,Sx] [,Dx]

Function: Run Applesoft program *pathname* without clearing present variables.

Example: CHAIN LINK loads and runs LINK without destroying the variables created by the previous Applesoft program.

CLOSE [*pathname*]

Function: Close all open files (except EXEC files), or the one specified.

Example: 100 PRINT CHR$(4)"CLOSE" closes all open disk files.

CREATE *pathname* [,T*filetype*] [,Sx] [,Dx]

Function: Create a subdirectory (or file entry if another type is given). SYS files must be created before they can be Bsaved.

Example: CREATE /MAIN/SUB creates subdirectory SUB in directory MAIN.

DELETE *pathname* [,Sx] [,Dx]

Function: Delete *pathname* from disk directory.

Example: DELETE /TEST/JUNK deletes the file JUNK from directory TEST.

EXEC *pathname* [,Fx or ,Rx] [,Sx] [,Dx]

Function: Execute *pathname*, treating data as keyboard entries.

Example: EXECUTIVE reads file UTIVE as keyboard commands.

FLUSH [*pathname*]

Function: Write all file buffers (or the one named) to disk without closing them. Normally data is not written until the file is closed or until the buffer is full.

Example: 50 PRINT CHR$(4)"FLUSH IT" immediately writes file IT to the disk.

FRE

Function: Take out the trash in a hurry. (Eliminate unused strings.)

Example: FRE frees the maximum amount of variable space.

IN# slot or [IN# Ax]

Function: Get future input from slot or memory address given.

Example: IN# A$C300 gets input from the 80-column routine at $C300.

LOAD *pathname* [,Sx] [,Dx]

Function: Load Applesoft program.

Example: LOAD STARTUP loads program STARTUP.

LOCK *pathname* [,Sx] [,Dx]

Function: Protect *pathname* from Delete, Rename and Save commands.

Example: LOCKET protects file ET from alteration (indicated by a leading asterisk when the disk is cataloged).

NOMON

Function: Absolutely positively none.

Example: NOMON immediately returns to Applesoft (See MON, page 52).

OPEN *pathname* [,Lx] [,T*filetype*] [,Sx] [,Dx]

Function: Prepare *pathname* for Read or Write command. Random access files require record length L to be given (shown as SUBTYPE in the 80-column catalog).

Example: 10 PRINT CHR$(4)"OPEN UP" opens file UP so that it can be read or written to.

POSITION *pathname* [,Fx or ,Rx] [,Sx] [,Dx]

Function: Move file pointer to a field or record in the open file. This is a useless command because READ and WRITE can do the same.

Example: 20 PRINT CHR$(4)"POSITION INFO,F20" positions the file pointer to start reading or writing at field 20 (start counting with field 0).

PR# slot or [PR# Ax] or [PR# slot, Ax]

Function: Send all output to specified slot or memory location or reassign slot's output address.

Example: PR#1,A$C200 directs all slot 1 output to slot 2. Try this for programs like DUMP which expect a printer in slot 1 when yours is in slot 2.

PREFIX [*pathname*] [,Sx] [,Dx]

Function: Display current prefix if no options specified, or set prefix according to options. PREFIX/ eliminates the prefix.

Example: PREFIX SUB,D1 sets the prefix to the subdirectory SUB in the volume on drive 1 (if the volume is /TRIDENT, the prefix will be /TRIDENT/SUB).

READ *pathname* [,Bx] [,Fx] [,Lx] [,Rx]

Function: Prepare open text file for reading with Input statements. ",R" specifies the record to read in a random access file.

Example: 40 PRINT CHR$(4)"READ NOTES,R2" allows the next Input statement to read the third record in the file NOTES.

RENAME *original pathname, new pathname* [,Sx] [,Dx]

Function: Change the name of an unlocked file, subdirectory or disk volume.

Example: RENAME /BLANK,/PROGRAMS changes the disk volume name BLANK to PROGRAMS.

RESTORE *pathname* [,Sx] [,Dx]

Function: Recall variables saved by Store command. (Replaces current variables.)

Example: 10 PRINT CHR$(4)"RESTORE SANITY" loads the VAR file SANITY and restores the variables to their proper locations.

RUN *pathname* [,@x] [,Sx] [,Dx]

Function: Load and run an Applesoft program.

Example: RUN BATTED.IN,@100 loads the program BATTED.IN and starts running it at line 100.

SAVE *pathname* [,Sx] [,Dx]

Function: Save an Applesoft program to disk.

Example: SAVE FACE,D2 saves the program FACE on drive 2.

STORE *pathname* [,Sx] [,Dx]

Function: Save all current variables in VAR file pathname.

Example: STORE BOUGHT compresses the current variables and stores them in file BOUGHT.

UNLOCK *pathname* [,Sx] [,Dx]

Function: Cancel protection given by the Lock command.

Example: UNLOCK THE/DOOR unlocks file DOOR in subdirectory THE. File DOOR can then be renamed, deleted or resaved.

VERIFY [*pathname*] [,Sx] [,Dx]

Function: Check to see if *pathname* exists. Doesn't examine the file itself.

Example: VERIFY THAT checks if file THAT is present in the currently specified directory or subdirectory. (Try typing "VERIFY" without a pathname.)

WRITE *pathname* [,Bx] [,Fx] [,Rx] [,Sx] [,Dx]

Function: Prepare previously opened text file pathname to receive data from Print statements.

Example: 60 PRINT CHR$(4)"WRITE ON" allows following Print statements to send data to file ON. Turn Write off with 100 PRINT CHR$(4).

- *pathname* [,Sx] [,Dx]

Function: Load and run a file. May be used instead of Brun, Exec or Run.

Example: -/ALMOST/ANYTHING runs file ANYTHING from directory ALMOST. ANYTHING can be an Applesoft program, a binary program, or a text file to be EXEC'd.

Free Tip: POKE 47466, 132 lets you specify the address where to run a BIN file. Of course, the file must be relocatable.

MEMORY USAGE

Most of the BIG U AMPER and COMMAND programs take away some programming memory by moving HIMEM down and installing themselves above the ProDOS buffers. The following list shows how much memory is used by each program:

One-pagers (256 bytes): APPENDER, DUMP.40, DUMP.80, EST, ONLINE and SUPER.POKE.

Two-pagers (512 bytes): ANYCAT, COPY, COPY.ONE, DUMP, HEX, INPUT.40, INPUT.80, REMOVE, REMOVE.128, SEE, SHOW and SHOW.WIPE.

Four-pager (1024 bytes): MON

Five-pager (1280 bytes): XLISTER

PAGE 3 USAGE

Page 3 is the memory from $300 to $3FF (768.1023 decimal). ProDOS reserves everything from $3D0 on, leaving 208 bytes free for programmers. Here's how BIG U divides it up:

Program	Hex	Decimal
CAT.STEPPER	300.34A	768.842
CAT.DATER	34B.35D	843.861
CAT.FIXER	35E.375	862.885
Unused Memory	376.3B0	886.944
KEYCAT (Beast Version)	3B1.3CF	945.975
PRODOS	3D0.3FF	976.1023

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